

October 2011 Research Brief –Getting From Here to There: Evaluating, Predicting and Developing Teacher Effectiveness

The first research brief in this series on teacher effectiveness, *All Eyes on Teachers*, explored how teacher effectiveness has emerged as a dominant education reform strategy in recent years. This second research brief will explore the research on how teacher effectiveness is being defined and evaluated, whether effective teaching can be predicted, how Breakthrough can play a unique role in the prediction of teacher effectiveness and how the Breakthrough teaching experience aligns with the research on effective teaching.

What is meant by an “effective teacher”?

Effective teachers, simply put, are teachers who facilitate student learning and improve academic achievement for their students. There is, however, debate over how to evaluate a teacher’s impact on student learning (i.e., should the impact on students be measured by gains on standardized tests? performance assessments that measure students’ critical thinking and analytical abilities? portfolios of student work? students’ appraisals of whether their teachers motivate, engage and inspire a love of learning? classroom observations done by peers or supervisors? all of the above?) Although value-added analyses of student achievement on standardized tests have gained prominence as the primary way to identify effective teachers, some educators and researchers question the reliability and validity of the results of value-added analyses.¹ For more information on value-added analyses, including its benefits and its limitations, see [Using Student Progress to Evaluate Teachers: A Primer on Value-Added Models](#). Though there is still considerable debate over how to accurately and reliably measure teacher effectiveness, several studies are currently underway, including the Gates Foundation’s Measures of Effective Teaching Project, which seek to both validate value-added analyses against other measures of teacher impact and to determine the best methods for evaluating effective teaching. This emerging research suggests that teacher effectiveness should always be evaluated using multiple measures, including, but not limited to, student achievement gains on standardized tests.²

¹ See, for example, Rothstein, J. (2009). “Student Sorting and Bias in Value-Added Estimation: Selection on Observables and Unobservables.” *Education Finance and Policy* 4(4), 537-571 and Schocher, P. & Chiang, H. (2010). Error Rates in Measuring Teacher and School Performance Based on Student Test Score Gains. Mathematica Policy Research.

² Little, Goe & Bell (2009). A Practical Guide to Evaluating Teacher Effectiveness. National Comprehensive Center for Teacher Quality; Darling-Hammond, L. (2010) Evaluating Teacher Effectiveness: How Teacher Performance Assessments Can Measure and Improve Teaching. Center for American Progress; Gordon, Kane & Staiger (2006). Identifying Effective Teachers Using Performance on the Job, The Brookings Institution.

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Can teaching effectiveness be predicted?

Evaluating effectiveness of practicing teachers is of enormous interest to researchers, educators and policymakers, but an area that has gotten almost as much attention is whether teacher effectiveness can be predicted before prospective teachers even set foot in a classroom or before prospective teachers enter a teacher training program. In other words, what are the factors (e.g., degrees, academic profiles, etc.) that predict whether prospective teachers will be effective in the classroom? In investigating this question, researchers have found that some factors assumed to contribute to greater teacher knowledge and expertise are actually unrelated to teacher effectiveness. For example, research has shown that neither certification nor master's degrees in education are necessarily correlated with effectiveness, despite the fact that certification and advanced degrees are valued by the profession and rewarded in most districts with automatic salary increases.³ The exception to this trend is in the area of science and mathematics. Research shows that having teachers with

Teacher characteristics that are correlated with improved student performance:

- Subject matter knowledge in math and/or science
- Academic ability/selectivity of teacher's undergraduate institution
- Past teaching success

undergraduate or advanced degrees in math or science and/or certification in math or science is correlated with improved student performance in those subject areas.⁴ Studies have also found that the strength of a teacher's academic ability and background, particularly the selectivity of a teacher's undergraduate institution, is correlated with improved student performance.⁵ Studies of the highest-performing countries in the world (e.g., Singapore, Finland, South Korea) reveal that these countries recruit *all* of their teachers from the top third of the academic pool, yet less than a quarter of new teachers in the United States come from the top third of the academic pool and only 14% of new teachers in high-poverty schools come from the top third of the academic pool.⁶

³ Gorden, R., Kane, T. & Staiger, D. (2006). Identifying Effective Teachers Using Performance on the Job. Brookings Institution; Walsh, K & Tracy, C. (2004) Increasing the Odds: How Good Policies Can Yield Better Teachers, National Council on Teacher Quality; Snipes, J & Horwitz, A. (2007). Recruiting and Retaining Effective Teachers in Urban Schools. Council of Great City Schools; Roza, M. & Miller, R. (2009) Separation of Degrees: State by State Analysis of Teacher Compensation by Master's Degrees, Center for American Progress; Prince, C., Koppich, J., Azar, T., Bhatt, M., and Witham, P. What do we know about the relationship between student achievement and teacher's educational attainment and experience, which is the traditional way that teacher salaries are determined? Center for Educator Compensation Reform.

⁴ Walsh, K & Tracy, C. (2004). Increasing the Odds: How Good Policies Can Yield Better Teachers, National Council on Teacher Quality; Snipes, J & Horwitz, A. (2007). Recruiting and Retaining Effective Teachers in Urban Schools. Council of Great City Schools

⁵ Walsh, K & Tracy, C. (2004). Increasing the Odds: How Good Policies Can Yield Better Teachers, National Council on Teacher Quality; Wayne, A.J., and Youngs, P. (2003). Teacher characteristics and student achievement gains. Review of Educational Research.

⁶ Auguste, B., Kihn, P. & Miller, M. (2010) Closing the Talent Gap: Attracting and Retaining Top Third Graduates to Careers in Teaching, An international and Market Research-Based Perspective. McKinsey and Company.

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How Breakthrough can play a role in the prediction of teacher effectiveness

Perhaps the best predictor of future teaching effectiveness is past teaching success. The researchers conducting the Measures of Effective Teaching Project found that “in every grade and subject we studied, a teacher’s past success in raising student achievement... is one of the strongest predictors of his or her ability to do so again.”⁷ Typically information on past teaching success cannot be used as a predictor for prospective teachers because most prospective teachers haven’t had the experience of leading their own classrooms, nor is there much data available on their teaching success. Unless, that is, they have been Breakthrough teachers. Breakthrough teachers, college and high school age teachers who are in charge of their own classrooms for intensive six week summer programs, are evaluated by mentor teachers and most Breakthrough programs have data on their students’ academic growth over the course of the summer which can be sorted by teacher. These data can provide a window into Breakthrough teachers’ potential teaching effectiveness before they even enter a teaching program.

How Breakthrough plays a role in developing effective teachers

In addition to so-called “traditional” teacher characteristics like education, certification, and past teaching performance, researchers have also explored the relationship between “non-traditional” teacher characteristics or personal attributes (e.g., conscientiousness, leadership, perseverance, etc.) and student achievement. Researchers have found varying levels of correlation between individual teacher attributes and student achievement, but taken together many of these teacher attributes have been shown to positively impact student achievement and speak to the need to use a broad set of measures to determine teacher effectiveness.⁸ Although there is no one formula for what makes an effective teacher, a consensus is beginning to develop around which attributes and skills are common among effective teachers. The attributes and skills of effective teachers include intellectual ability, leadership ability, perseverance, ability to motivate others, responsibility, respect for others, critical thinking, strong organization skills, strong communication skills and commitment to high achievement.⁹ These attributes and skills are all characteristics that Breakthrough programs look for in their prospective teachers and are embodied in Breakthrough’s teacher selection rubric. In accordance with the research that shows that effective teachers, regardless of what characteristics they bring to the table, must also

⁷ Bill & Melinda Gates Foundation (2010) Learning about Teaching: Initial Findings from the Measures of Effective Teaching Project.

⁸ Rockoff, J., Jacob, B., Kane, T., & Steiger, D. (2009). Can you Recognize an Effective Teacher When You Recruit One?

⁹ Walsh, K. & Tracy, C. (2004). Increasing the Odds: How Good Policies Can Yield Better Teachers. National Council on Teacher Quality. Little, O., Goe, L. & Bell, L. (2009). A Practical Guide to Evaluating Teacher Effectiveness. National Comprehensive Center for Teacher Quality

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be trained in effective teaching practices,¹⁰ As part of Breakthrough’s Intern Teacher Training Initiative (ITTI), Breakthrough teachers are trained in research-based principles for effective instruction, including providing clear objectives and expectations; breaking down skills into smaller, manageable steps; monitoring student learning; checking for understanding and adjusting instruction.¹¹ Breakthrough teacher training is aligned around a clear vision for instructional practice, which research also shows supports effective teaching.¹² Finally, the structure of the Breakthrough summer teaching experience itself—where Breakthrough teachers are in charge of their own classroom for six weeks and receive mentoring and coaching from professional teachers— comprises an intensive field experience, which researchers are now emphasizing as a key element in the preparation of effective teachers.¹³ The Breakthrough teaching experience is aligned with what the research says about who should be recruited to teach, which skills and knowledge should be cultivated in order to develop effective teachers and the importance of well-designed field experiences, but Breakthrough is only the first step on the path to creating effective teachers who have the skills to ensure their students are successful. The next, and final, teacher effectiveness research brief will focus on the most promising programs, models and strategies that support high-potential prospective teachers to become highly effective practicing teachers.

¹⁰ Lowenberg-Ball, D. (2011, February 20). Let’s Radically Improve Teacher Training (and Stop Fighting About It). *Chronicle of Higher Education*. Retrieved from <http://chronicle.com/article/Lets-Radically-Improve/126428/> and Darling-Hammond, L. (2006). Constructing 21st Century Teacher Education. *Journal of Teacher Education*, Vol 57.

¹¹ Breakthrough Collaborative (2010). Improving Teacher Training Initiative Strategies for Instruction and Classroom Management & Grossman, P et al (2010). Measure for Measure: The Relationship Between Measures of Instructional Practice in Middle School English Language Arts and Teachers’ Value-Added Scores.

¹² Odden, A & Kelley, J. (2008). What is Strategic Management of Human Capital? Consortium for Policy Research in Education

¹³ National Council for Accreditation of Teacher Education (2010). Transforming Teacher Education through Clinical Practice: A National Strategy to Prepare Effective Teachers and Paine, S. & Schleicher, A. (2011) What the U.S. Can Learn From the World’s Most Successful Reform Efforts. McGraw-Hill Research Foundation Policy Paper.

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