

The Effects of Teacher Preparation and Training Options

A Review of the Research

Comparing Traditional and Alternative Pathways to Teaching

Research clearly indicates that when comparing traditional and alternative teacher preparation programs, traditional programs produce better teacher outcomes such as instructional knowledge, sense of efficacy and retention. However, when examining student outcomes such as achievement on state assessments, drawing conclusions about the effects of traditional versus alternative programs is difficult at best.

Results across studies over the past two decades are quite mixed, with results even *within* some studies mixed depending on the grade levels and subjects represented. One factor complicating this research is that definitions of what makes a teacher preparation program “alternative” vary widely. Programs can vary in terms of the acceptance criteria, format and length. Many states have their own ranges of alternative programs and there are several national programs, including Teach for America, New Teacher Project Teaching Fellows and Troops to Teachers. When studying traditional and alternative programs, researchers have grouped them differently.

Some studies have found that traditionally trained teachers have a greater positive impact on student achievement than alternatively trained ones. Others have found the opposite. Among alternative programs, TFA has shown the strongest positive effect, particularly in math and science. Still other studies have found that alternative and traditional teacher preparation programs are equally effective.

The mixed results of research may say less about picking a “winner” between program types and more about the need to look deeply at — and address head-on — the quality of programs overall. The National Council on Teacher Quality conducted comprehensive national reviews of teacher preparation programs in 2013 and 2018, and both reviews found that the vast majority of programs do not prepare candidates well with the content knowledge and pedagogy they will need in the classroom. This includes content related to states’ recently adopted college- and career-readiness standards and scientific methods of reading instruction. Additionally, few programs ensure that all candidates have strong clinical experiences, such as placement in classrooms taught by teachers who are themselves proven effective (not just willing volunteers).

Implications for States

Regarding preparation program types, policymakers may want to concern themselves less with promoting one type or another and instead consider increasing the support and resources to focus on quality and outcomes for all state programs.

Policymakers should note that several of the studies reviewed found large variations in teacher impact on student achievement within the sample studied (the district or school). This indicates the difficulty of attributing effects to one factor within the complex context of teaching and learning, as well as the difficulty of studying reforms in hindsight.

Are Advanced Degrees Helping Increase Teacher Effectiveness and Retention?

Fifty-two percent of the nation's 3.3 million public school teachers hold a master's degree or higher. Many states' policies around educator training, certification, effectiveness, compensation and advanced roles provide incentives to earn advanced degrees. Yet research suggests that policymakers take another look at the relationship between advanced degrees and teacher's impact on student achievement – the picture is complex.

Several widely cited studies and meta-analyses of the research find that **overall there is little or no correlation between teachers holding master's degrees and improved student achievement** on state tests in math and reading. This finding is upheld even when researchers control for selection bias – the possibility that “go-getter” teachers are more likely to pursue a master's degree than “non-go getters.”

However, **research on teachers in secondary grades does show some benefit to holding a master's degree in the discipline taught** — for example, a high school math teacher holding a master's degree in math. One factor confounding the results of this research is that teachers [do not usually pursue](#) advanced degrees in the field that would most likely impact their *instructional* effectiveness. The most common master's degree teachers earn is in school *administration*.

Several studies conducted between 1975 and 2004 yield contradictory results related to advanced degrees and their effect on teacher retention. Approximately half of the studies conclude that advanced degrees help retain teachers in the profession while the other half conclude that teachers who obtain advanced degrees were more likely to leave the profession. As these studies are dated and difficult to interpret, they are of little use to policymakers. A more helpful resource is an analysis of attrition studies that led researchers from three universities to conclude that **more effective teachers are at least as likely to remain in the profession as less effective teachers**.

Does National Board Certification Increase Teacher Effectiveness?

As of early 2020 there are over 120,000 Nationally Board Certified teachers nationwide. **Research comparing the effectiveness of certified and non-certified teachers in improving student achievement in math and reading shows mixed results.**

Some studies show that board-certified teachers positively impact student achievement more than non-certified teachers with similar levels of experience, and that they may be particularly effective with disadvantaged students. Other studies find no difference in effectiveness. The effects tend to be small and to vary by subject, grade level and certification type.

Implications for States

How Should Our State Reward Advanced Teacher Training?

State education leaders may want to reconsider any policies that offer blanket incentives for teachers to earn advanced degrees and certifications. However, policymakers may want to consider the value of preserving incentives for secondary teachers to pursue advanced degrees in the fields they teach.

How Can Our State Best Incentivize Teacher Growth?

As there is little or no evidence that a master's degree leads to higher achievement, and inconclusive results as to the effects of advanced degrees on retention, it would behoove states to focus on incentives for teacher effectiveness, as this is the measure that consistently leads to higher student achievement *and* retention. Using multiple measures of assessment for teacher effectiveness — including robust teacher observations, formative and summative assessment impacts, staff and student surveys and a holistic view of all the professional growth pursuits of a teacher — is a more useful, albeit more complicated, strategy. The likely return on investment, though, points to the worth of navigating a more complex policy.

For more information on teacher preparation, go SREB.org/TeacherPrep.

REFERENCES

- Buddin, R. and Zamarro, G. (2009). Teacher Qualifications and Student Achievement in Urban Elementary Schools. RAND Corporation. <https://www.rand.org/pubs/reprints/RP1410.html>
- Cantrell, S., Fullerton, J., Kane, T., Staiger, D. (2008). National Board Certification and teacher effectiveness: Evidence from a random assignment experiment. National Bureau of Economic Research. Working Paper 14608. <https://www.nber.org/papers/w14608>
- Clark, M., Chiang, H., Silva, T., McConnell, S., Sonnenfeld, K., Erbe, A. and Puma, M. (2013). The effectiveness of secondary math teachers from Teach For America and the Teaching Fellows Programs (NCEE 2013-4015). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. <https://ies.ed.gov/ncee/pubs/20134015/>
- Chingos, M. and Peterson, P. (2011). It's Easier to Pick a Good Teacher Than to Train One: Familiar and new results on the correlates of teacher effectiveness. *Economics of Education Review* 30(3):449-465. <https://www.sciencedirect.com/science/article/abs/pii/S0272775710001755?via%3Dihub>
- Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2010). Teacher credentials and student achievement in high school: A cross-subject analysis with student fixed effects. *Journal of Human Resources*, 45(3), 655-681.
- Clotfelter, C., Ladd, H. and Vigdor, J. (2007). How and why do teacher credentials matter for student achievement? National Bureau of Economic Research. Working Paper 12828. <http://www.nber.org/papers/w12828>
- Cowana, J. and Goldhaber, D. (2016). National Board Certification and Teacher Effectiveness: Evidence From Washington State. *Journal of Research on Educational Effectiveness*, Vol. 9, No. 3, pp. 233–258. <http://dx.doi.org/10.1080/19345747.2015.1099768>
- Goldhaber, D., & Anthony, E. (2007). Can teacher quality be effectively assessed? *The Review of Economics and Statistics* 89(1), 134-150
- Hansen, M. and Sass, T. (2015). Performance estimates of Teach For America teachers in Atlanta metropolitan area school districts. National Center for Analysis of Longitudinal Data in Education Research. Working Paper No. 145. <https://caldercenter.org/publications/performance-estimates-teach-america-teachers-atlanta-metropolitan-area-school-districts>
- Hanushek, E., Kain, J., O'Brien, D., Rivkin, S. (2005). The market for teacher quality. National Bureau of Economic Research. Working Paper 11154 <http://www.nber.org/papers/w11154>
- Harris, D. and Sass, T. (2009). The effects of NBPTS-certified teachers on student achievement. *Journal of Policy Analysis & Management*. Winter 2009, Vol. 28 Issue 1, p55-80.
- Henry, G. T., Bastian, K. C., Fortner, C. K., Kershaw, D. C., Purtell, K. M., Thompson, C. L., & Zulli, R. A. (2014). Teacher preparation policies and their effects on student achievement. *Education Finance and Policy* 9(3), 264-303. <https://publicpolicy.unc.edu/files/2015/07/Teacher-Preparation-Policies-and-Their-Effects-on-Student-Achievement.pdf>
- Horn, A. and Sung, T. J. (2017). The Impact of Graduate Education on Teacher Effectiveness: Does a Master's Degree Matter? Midwestern Higher Education Compact. https://www.mhec.org/sites/default/files/resources/teacherprep1_20170301_2.pdf
- Jang, S.T. and Horn, A. (2017). The relative effectiveness of traditional and alternative teacher preparation programs: A review of recent research. Midwestern Higher Education Compact. https://www.mhec.org/sites/default/files/resources/teacherprep2_20170301_1.pdf
- Johnson, S., Berg, J., & Donaldson, M. 2005. Who Stays in Teaching and Why: A Review of the Literature on Teacher Retention. The Project on the Next Generation of Teachers, Harvard Graduate School of Education. https://projectngt.gse.harvard.edu/files/gse-projectngt/files/harvard_report.pdf
- Kane, T. J., Rockoff, J. E., & Staiger, D. O. (2008). What does certification tell us about teacher effectiveness? Evidence from New York City. *Economics of Education Review* 27(6), 615-631.

- King Rice, J. (2003). Understanding the Effectiveness of Teacher Attributes. Washington D.C. Economic Policy Institute.
- Ladd, H., Sorensen, L. (2015). Do Master's Degrees Matter? Advanced Degrees, Career Paths, and the Effectiveness of Teachers. CALDER Working Paper No. 136. <https://caldercenter.org/publications/do-master%E2%80%99s-degrees-matter-advanced-degrees-career-paths-and-effectiveness-teachers>
- Lincove, J. A., Osborne, C., Mills, N., & Bellows, L. (2015). Teacher preparation for profit or prestige: Analysis of a diverse market for teacher preparation. *Journal of Teacher Education* 66(5), 415-434.
- National Council on Teacher Quality. (2004). Increasing the Odds How Good Policies Can Yield Better Teachers National Council on Teacher Quality. NCTQ https://www.nctq.org/nctq/images/nctq_io.pdf
- National Council on Teacher Quality. (2004). Increasing the Odds How Good Policies Can Yield Better Teachers National Council on Teacher Quality. NCTQ https://www.nctq.org/nctq/images/nctq_io.pdf
- National Council on Teacher Quality. (2013). Teacher Prep Review. <https://www.kauffman.org/what-we-do/research/2013/06/nctq-teacher-prep-review-a-review-of-us-teacher-preparation-programs>
- National Council on Teacher Quality. (2018). Teacher Prep Review. <https://www.nctq.org/policy-area/Teacher-Prep>
- Ronfeldt, M., Loeb, S. & Wyckoff J. 2013. How Teacher Turnover Harms Student Achievement. *American Educational Research Journal*. <http://aer.sagepub.com/content/50/1/4>
- Sato, M., Wei, R., Darling-Hammond, L. (2008). Improving teachers' assessment practices through professional development: The case of National Board Certification. *American Educational Research Journal* 45(3): 669-700. <https://journals.sagepub.com/doi/10.3102/0002831208316955>
- U.S. Department of Education, Institute of Education Sciences, What Works Clearinghouse. (2016). Teacher Training, Evaluation, and Compensation intervention report: Teach For America. Retrieved from <http://whatworks.ed.gov>
- Whitford, D., Zhang, D. and Katsiyannis, A. (2017). Traditional vs. alternative teacher preparation programs: A meta-analysis. *Journal of Child & Family Studies* 27:671–685. <https://www.future-ed.org/work/student-performance-and-teacher-preparation-traditional-vs-alternative/>