



REL Appalachia Ask-A-REL Response

Teacher Workforce
February 2018

Question:

How is equity in teacher quality defined and measured?

Response:

Thank you for your request to our REL Reference Desk regarding evidence-based information about equity and teacher quality. Ask-A-REL is a collaborative reference desk service provided by the 10 Regional Educational Laboratories (RELs) that, by design, functions much in the same way as a technical reference library. Ask-A-REL provides references, referrals, and brief responses in the form of citations in response to questions about available education research.

Following an established REL Appalachia research protocol, we searched for research reports and descriptive study articles on definitions and measures of equity in teacher quality. The sources included ERIC and other federally funded databases and organizations, research institutions, academic research databases, and general Internet search engines. For more details, please see the methods section at the end of this document.

The research team did not evaluate the quality of the resources provided in this response; we offer them only for your reference. Also, the search included the most commonly used research databases and search engines to produce the references presented here, but the references are not necessarily comprehensive, and other relevant references and resources may exist.

References

Adamson, F. & Darling-Hammond, L. (2012). Funding disparities and the inequitable distribution of teachers: Evaluating sources and solutions. *Education Policy Analysis Archives*, 20(37), 1–46. Retrieved from <https://eric.ed.gov/?id=EJ990114>

From the abstract: “The inequitable distribution of well-qualified teachers to students in the United States is a longstanding issue. Despite federal mandates under the No Child Left Behind Act and the use of a range of incentives to attract teachers to high-need schools, the problem remains acute in many states. This study examines how and why teacher quality is inequitably distributed, by reviewing research and examining data on school funding, salaries, and teacher qualifications from California and New York—two large states that face similar demographic diversity and educational challenges. Using wage adjustments to

control for cost of living differentials, we find that both overall school funding and teacher salary levels are highly inequitable both across and within states—generally exhibiting a ratio of 3 to 1 between high- and low-spending jurisdictions. Furthermore, low-salary districts serve students with higher needs, offer poorer working conditions, and hire teachers with significantly lower qualifications, who typically exhibit higher turnover. We find that districts serving the highest proportions of minority and low-income students have about twice as many uncredentialed and inexperienced teachers as do those serving the fewest. In an elasticity analysis, we find that increases in teacher salaries are associated with noticeable decreases in the proportions of teachers who are newly hired, uncredentialed, or less well educated. These teacher qualifications, in turn, are associated with student achievement, holding student characteristics constant. We review research on strategies that have been largely unsuccessful at addressing this problem, such as “combat pay” intended to recruit teachers to high need schools, suggesting that small bonuses might be productive if added to an equitable salary structure where working conditions are comparable, but may be inadequate to compensate for large differentials in salaries and working conditions. We review studies illustrating successful policy strategies in states that have taken a more systemic approach to equalizing salaries, raising teaching standards, and providing supports for teacher learning and school development. We recommend federal initiatives that could provide stronger supports and incentives for equalizing students’ access to well-qualified and effective teachers, including equalizing allocations of ESEA resources across states, enforcing existing ESEA comparability provisions for ensuring equitable funding and equally qualified teachers to schools serving different populations of students, evaluating progress on resource equity in state plans and evaluations under the law, and requiring states to meet standards of resource equity—including the availability of well-qualified teachers—for schools identified as in need of improvement.”

Behrstock, E. & Clifford, M. (2010). *Ensuring the equitable distribution of teachers: Strategies for school, district, and state leaders*. Washington, D.C.: National Comprehensive Center for Teacher Quality. Retrieved from <https://eric.ed.gov/?id=ED520725>

From the abstract: “National and state-level policies recognize the critical role that talented teachers play in ensuring that all students learn and in building capacity for instructional excellence in schools. Teachers influence student learning more than any other factor in the school, and the dividends of effective teaching are cumulative. A growing body of research suggests, however, that the distribution of high-quality teachers is not equitable within states, districts, or schools. Although broader social factors also contribute to student performance, public education leaders at all levels of the education system have the opportunity and obligation to improve the distribution of teachers so that minority children and those from families of low socioeconomic status are not systematically denied access to effective teachers and high-quality learning. This TQ Research & Policy Brief discusses how school and district administrators, with the support of state and federal leaders, can influence the equitable distribution of teachers through hiring, placement, working conditions, and compensation policies and practices. The brief contains the following information: (1) An explanation of the problem of inequitable teacher distribution; (2) An overview of school policies and practices that appear to contribute to equitable teacher

distribution; (3) Strategies for school leaders to enhance teacher recruitment, hiring, and placement practices as well as improve working conditions; (4) Strategies for district leaders to enhance teacher recruitment, hiring, and placement practices as well as improve teacher compensation policies; (5) Strategies for state and federal leaders to facilitate district policymaking and build district capacity to support the equitable distribution of teachers; and (6) Resources to support leaders in promoting the equitable distribution of teachers.”

Glazerman, S. & Jeffrey, M. (2011). *Do low-income students have equal access to the highest-performing teachers? NCEE Evaluation Brief (NCEE 2011-4016)*. Washington, D.C.: National Center for Education Evaluation and Regional Assistance, U.S. Department of Education. Retrieved from <https://eric.ed.gov/?id=ED517966>

From the abstract: “This brief describes the prevalence of highest-performing teachers in ten purposely selected districts across seven states. The overall patterns indicate that low-income students have unequal access, on average, to the district’s highest-performing teachers at the middle school level but not at the elementary level. However, there is evidence of variation in the distribution of highest-performing teachers within and among the ten districts studied. Some have an under-representation of the highest-performing teachers in high-poverty elementary and middle schools. Others have such under-representation only at the middle school level, and one district has a disproportionate share of the district’s highest-performing teachers in its high-poverty elementary schools.”

Imazeki, J. & Goe, L. (2009). *The distribution of highly qualified, experienced teachers: Challenges and opportunities. TQ research & policy brief*. Washington, D.C.: National Comprehensive Center for Teacher Quality. Retrieved from <https://eric.ed.gov/?id=ED520728>

From the abstract: “States have been working on strategies to address the equitable distribution of teachers for a number of years. The Elementary and Secondary Education Act (ESEA), as reauthorized by the No Child Left Behind (NCLB) Act of 2001, specifically calls for states to identify and address the inequitable distribution of highly qualified, experienced teachers. The research studies summarized in this brief use various measures of teacher quality, including selectivity of undergraduate college, teacher scores on standardized exams, and value-added measures of student outcomes as well as experience and subject-matter knowledge. Lankford, Loeb, and Wykoff (2002) specifically examine the correlations among a number of school-level teacher quality measures and find relatively high correlations, indicating that schools that rank relatively low on one measure rank relatively low on other measures as well. In this brief, the term “teacher quality” is used to refer broadly to these measures. This brief does the following: (1) Discusses what the research says about improving the distribution of highly qualified, experienced teachers; (2) Presents policy responses to equitable distribution challenges and reviews their relative cost-effectiveness; (3) Suggests ways for states to use data to identify districts and schools in need of targeted assistance for attracting and retaining highly qualified teachers, and highlights the data that states and districts should be collecting and analyzing to assess the

effectiveness of new programs for improving teacher distribution; and (4) Describes strategies currently being used by states to improve teacher distribution.”

Isenberg, E., Max, J., Gleason, P., Johnson, M., Deutsch, J., & Hansen, M. (2016). *Do low-income students have equal access to effective teachers? Evidence from 26 districts (NCEE 2017-4007)*. Washington, D.C.: National Center for Education Evaluation and Regional Assistance, U.S. Department of Education. Retrieved from <https://ies.ed.gov/ncee/pubs/20174008/pdf/20174007.pdf>

From the executive summary: “This report examines whether low-income students are taught by less effective teachers than high-income students and if so, whether reducing this inequity would close the student achievement gap. It also describes how the hiring of teachers and their subsequent movement into and out of schools could affect low-income students’ access to effective teachers. The study includes fourth- to eighth-grade teachers over five school years (2008–2009 to 2012–2013) in 26 school districts across the country. Teacher effectiveness is measured using a statistical approach that estimates a teacher’s contribution to student learning controlling for students’ prior achievement and other characteristics. The study found small inequities in teacher effectiveness between low- and high-income students. However, in a small subset of districts, there is meaningful inequity in access to effective teachers in math where providing equal access to effective teachers over a five year period would reduce the math achievement gap by at least a tenth of a standard deviation of student achievement, the equivalent of about 4 percentile points. The report also finds patterns of teacher hiring and transfers that are consistent with small inequities in teacher effectiveness while teacher attrition is not.”

Kumar, S. & Waymack, N. (2014). *Unequal access, unequal results: Equitable teacher distribution in Miami-Dade County Public Schools*. Washington, D.C.: National Council on Teacher Quality. Retrieved from <https://eric.ed.gov/?id=ED556309>

From the abstract: “At the request of the Urban League of Miami, the National Council on Teacher Quality (NCTQ) analyzed the distribution of teachers in Miami-Dade County Public Schools. In this paper, the authors examine teacher-level data to determine whether indicators correlated with teacher quality vary across the district based on socioeconomic differences, and recommend ways the district can distribute teachers in a more equitable way. The paper—while specific to Miami-Dade County—examines an issue with which school districts across the country struggle. To that end, the U.S. Department of Education Office for Civil Rights has begun collecting data on student enrollment by race and ethnicity and teacher characteristics. The first summary of these data indicates that (1) black students are more likely to be taught by a first-year teacher than white students; (2) their teachers are more likely to be paid less; and (3) they are more likely to have an uncertified or unlicensed teacher. An appendix, “Research base that supports the five indicators used in the report,” is included.”

Ronfeldt, M., Lankford, H., Loeb, S., & Wyckoff, J. (2011). *How teacher turnover harms student achievement* (NBER Working Paper No. 17176). Cambridge, MA: The National Bureau of Economic Research. Retrieved from <https://www.nber.org/papers/w17176>

From the abstract: “Researchers and policymakers often assume that teacher turnover harms student achievement, but recent evidence calls into question this assumption. Using a unique identification strategy that employs grade-level turnover and two classes of fixed-effects models, this study estimates the effects of teacher turnover on over 600,000 New York City 4th and 5th grade student observations over 5 years. The results indicate that students in grade-levels with higher turnover score lower in both ELA and math and that this effect is particularly strong in schools with more low-performing and black students. Moreover, the results suggest that there is a disruptive effect of turnover beyond changing the composition in teacher quality.”

Schultz, L. M. (2014). Inequitable dispersion: Mapping the distribution of highly qualified teachers in St. Louis metropolitan elementary schools. *Education Policy Analysis Archives*, 22(90), 1–24. Retrieved from <https://eric.ed.gov/?id=EJ1050052>

From the abstract: “The No Child Left Behind (NCLB) Act of 2001 required all schools, including those located in historically disadvantaged areas, to employ highly qualified teachers. Schools in areas with higher levels of poverty and students of color have historically employed a higher percentage of less qualified teachers (Clotfelter, Ladd, & Vidgor, 2005, 2006; Hill & Lubienski, 2007; Lankford, Loeb, & Wyckoff, 2002). This study examines the distribution, location, and exceptions to highly qualified teachers in St. Louis metropolitan elementary schools. Using Geographic Information Systems (GIS), this study demonstrates how the distribution of highly qualified teachers remains relevant to urban education policy discussions.”

Additional Ask-A-REL Responses to Consult

Ask-A-REL Southwest at SEDL. (2016). *What does research reveal about practices in creating equity across a school district?* Retrieved from http://relsouthwest.sedl.org/ask_archive/09-2016_Ask_RELSW_District_Equity_Practices.pdf

Ask-A-REL Southwest at SEDL. (2017). *Provide research/evidence on the use of equity index/scorecards (generally) in measuring educational outcomes for culturally diverse students in K–12.* Retrieved from http://relsouthwest.sedl.org/ask_archive/8-17_aar_equity-index-scorecards.pdf

Ask-A-REL West at WestEd. (2015). *Summary of resources on equity and access.* Retrieved from https://relwest.wested.org/system/documents/pdfs/461/original/REL_West_Memo_CORE_Equity_and_Access_508.pdf?1461169337

Additional Organizations to Consult

Center on Great Teachers and Leaders at American Institutes for Research:

<http://www.gtlcenter.org/>

From the website: “The Center on Great Teachers and Leaders (GTL Center) is dedicated to supporting state education leaders in their efforts to grow, respect, and retain great teachers and leaders for all students. The GTL Center continues the work of the National Comprehensive Center for Teacher Quality (TQ Center) and expands its focus to provide technical assistance and online resources designed to build systems that:

- Support the implementation of college and career standards.
- Ensure the equitable access of effective teachers and leaders.
- Recruit, retain, reward, and support effective educators.
- Develop coherent human capital management systems.
- Create safe academic environments that increase student learning through positive behavior management and appropriate discipline.
- Use data to guide professional development and improve instruction.”

IDRA Equity Assistance Center-South: <http://www.idraeacsouth.org/>

From the website: “The IDRA EAC-South builds bridges among administrators, teachers, parents, students and community members so that all stakeholders can find that common higher ground where all students will benefit regardless of race, sex or national origin. The center’s philosophy maintains that desegregated school settings must ensure full inclusion and participation by all students and their parents regardless of race, sex, national origin or religion. The IDRA EAC-South is one of four federally-funded centers that provide technical assistance and training at the request of school districts and other responsible governmental agencies to build capacity of local educators to ensure a more equitable learning environment for all students.”

Stanford Center for Opportunity Policy in Education (SCOPE): <https://edpolicy.stanford.edu/>

From the website: “The Stanford Center for Opportunity Policy in Education (SCOPE) fosters research, policy, and practice to advance high-quality, equitable education systems in the United States and internationally. SCOPE engages in research and develops authentic relationships with educators, organizations, and policymakers to address pressing problems of equity, opportunity and quality in education.”

Methods

Keywords and Search Strings

The following keywords and search strings were used to search the reference databases and other sources:

- Equit* AND (teacher distribution OR teacher quality)

Databases and Resources

We searched ERIC, a free online library of more than 1.6 million citations of education research sponsored by the Institute of Education Sciences (IES), for relevant resources. Additionally, we searched the academic database ProQuest, Google Scholar, and the commercial search engine Google.

Reference Search and Selection Criteria

In reviewing resources, Reference Desk researchers consider—among other things—these four factors:

- Date of the publication: Searches cover the most current information (i.e., within the last ten years), except in the case of nationally known seminal resources.
- Search priorities of reference sources: Search priorities include IES, nationally funded, and certain other vetted sources known for strict attention to research protocols. Applicable resources must be publicly available online and in English.
- Methodology: The following methodological priorities/considerations guide the review and selection of the references: (a) study types—randomized controlled trials, quasi experiments, surveys, descriptive data analyses, literature reviews, policy briefs, etc., generally in this order; (b) target population, samples (representativeness of the target population, sample size, volunteered or randomly selected), study duration, etc.; (c) limitations, generalizability of the findings and conclusions, etc.
- Existing knowledge base: Vetted resources (e.g., peer-reviewed research journals) are the primary focus, but the research base is occasionally slim or nonexistent. In those cases, the best resources available may include, for example, reports, white papers, guides, reviews in non-peer-reviewed journals, newspaper articles, interviews with content specialists, and organization websites.

Resources included in this document were last accessed on January 18, 2018. URLs, descriptions, and content included here were current at that time.

This memorandum is one in a series of quick-turnaround responses to specific questions posed by education stakeholders in the Appalachia region (Kentucky, Tennessee, Virginia, and West Virginia), which is served by the Regional Educational Laboratory Appalachia (REL AP) at SRI International. This Ask-A-REL response was developed by REL AP under Contract ED-IES-17-C-0004 from the U.S. Department of Education, Institute of Education Sciences, administered by SRI International. The content does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. government.