

Possible Interventions to Address Inequity in Education in Primary Schools

Evelyn Zhang

Abstract

Inequity in education as a result of improper funding has a negative effect on disadvantaged students' futures. Education equity is when schools and local and state governments provide resources unique to each individual to ensure everyone receives what they need to thrive in a learning environment. Preliminary research shows that schools in low-income communities aren't receiving enough funding, often because property taxes are a large factor in the quality of education. It's crucial to research interventions that target inequity in education because there is evidence of widening socioeconomic gaps in achievement as children get older. I examine different possible interventions, weigh the advantages and disadvantages, and determine whether it is a suitable action plan for governments. In this paper, I discuss classroom size reduction and equity funding, with level of intervention in mind. I found that although equity funding is uncommon, it does the best job of addressing the root cause: funding. The data compiled can be used to propose policies that advocate equity funding.

Introduction

A long-term national study by the Annie E. Casey Foundation shows that students who are not reading proficiently (meaning they are not reading at grade level according to a standardized test of reading comprehension prescribed by the state) by third grade are four times more likely to leave high school without a diploma than proficient readers.

Poverty exacerbates the problem: students who have lived in poverty are three times more likely to drop out or fail to graduate on time than their more affluent peers (Hernandez, Donald J. 2011).¹ The statistics found by different states' departments of education are astounding. 46.5 percent of third-grade students in Oregon met or exceeded state standards (meaning students showed either proficiency or mastery) in reading in 2019 (Oregon Department of Education, n.d), whereas only 25 percent of students in Florida were at least proficient in reading in 2022 (Florida Department of Education, n.d).

How did this disparity in education come to be? And why are there significant differences in both resource allocation and academic success between disadvantaged students—students from

¹ Poverty definition: total family income is less than the federal threshold

low-income communities, from racial minorities, or with disabilities—and students from more privileged backgrounds?²

To address these education gaps, our government needs to implement policies that promote education equity. Education equity is when schools and local and state governments provide resources unique to each individual to ensure everyone receives what they need to thrive in a learning environment. Equity is different from equality because equality implies that everyone receives the same resources, whereas equity caters to the specific needs of each student to ensure an equal playing field, meaning some students may receive more resources than others.

There is not a nationally recognized standard regarding accountability and education policy. A standard is a set measure used to evaluate education equity and can shape government policies so that there is a standardized expectation between all schools in the nation. If a standard is set, schools know what exact measures to take to improve education equity and government officials can easily utilize it when checking whether a school is promoting education equity. Therefore, a lack of a nationally recognized standard leads to large disparities in schools between different states and makes it hard for officials to hold states accountable for promoting education equity because there isn't a prescribed set of strict measures that schools need to adhere to.

There is a diverse pool of proposed interventions—some work to better train instructors, some expand the availability of out-of-school aid, and some target the root cause of inequities in funding. Fortunately, some have already been implemented; for example, the Pleasanton School District offers many types of summer programs, and one of them is an enrichment program that is free of cost (and fee waiver forms are provided if families qualify). Families can opt in and decide to send their children to summer school. This program is particularly helpful because the year 9 achievement gap can be traced to summer learning differences during the elementary years which determines who drops out in high school and who continues on the path to obtaining a college degree (Alexander, et al., 2007).

We need to examine these different approaches to determine which level of intervention, or government, should be used to set the education equity standard. Inequity in education is a complex problem. For example, there's an egalitarian interest in the "quality of educational opportunity and potential of education to create opportunity for individuals" (deMarrais & LeCompte, 1995; Kubow & Fossum, 2007). There's also an economic interest in equipping citizens with necessary workplace skills. When better equipped, students are able to earn a higher income and therefore bolster the economy. Based on data from the high school class of 2015, increasing the nation's high school graduation rate to 90 percent would result in a \$5.7 billion increase in the gross domestic product (GDP) (Alliance for Excellent Education, 2017).³

² Not an exhaustive list but are the main things federal government looks for when allocating extra funding

³ Data is from organization that has an interest in education equity

Moreover, there is a humanistic interest: education is a fundamental human right and each individual has the right to develop their highest potential.

This paper will explore the problem of education equity and its impact. It will then examine different interventions that can be implemented in primary schools to promote education equity. Then it will propose research topics for future researchers to further expand the literature on educational equity and how policymakers can utilize this research to improve education.

Problem

According to a study by the National Bureau of Economic Research, in America, high-poverty districts spend 15.6 percent less per student compared to their low-poverty counterparts. The study found that less educational funding has an adverse effect on a child's future, since education can break the cycle poverty—a 20 percent increase in per-student spending a year in poorer districts can lead to 25 percent higher earnings in the future (Jackson et al., 2015).

Inequity in education as a result of improper funding has a negative effect on disadvantaged students' futures. Inequity in education is present everywhere you look in the school system. Examples of inequity in education are disproportionate test scores, the reading crisis, lack of resources, classroom sizes, course availability, higher dropout rates for students of color, and under-enrollment of students of color in higher education. Most, if not all, of these issues, can be attributed to differences in funding between schools in more affluent neighborhoods compared to schools in socioeconomically disadvantaged neighborhoods.

Schools in low-income communities aren't receiving enough funding, which is often because property taxes are a large factor in the quality of education. This is an example of social segregation, with wealthier families being able to purchase houses in highly-ranked school districts (Gibbons and Machin, 2003; Allen et al., 2010). The higher the real estate value of a school district's surrounding neighborhoods, the more funding it receives because the same property tax rate there generates much more revenue than in low-income neighborhoods.

Less funding in less-funded schools leads to larger classroom sizes since classroom size reduction requires additional funding and resources. The lowest student-to-teacher ratios are found in districts with the highest-income households (National Center for Education Statistics, 1996). On the other hand, in predominantly minority schools, schools are on average more than twice as large as predominantly white schools (Darling-Hammond, 2016).

This all results in disadvantaged students falling more behind in school, making it harder to catch up. Falling behind in school in primary and secondary education has a negative effect on these students' futures in terms of the standard of living after they graduate from high school. College graduates from families with an income below 185 percent of the federal poverty level⁴ earn 91 percent more throughout their lifetime compared to those who only hold a high school diploma. (Hershbein, 2016).

This demonstrates just how crucial a high school education can be to having a successful career and life after education. A good education allows students a chance to escape the poverty cycle.

The ability to successfully earn a high school diploma is set up by building a quality educational foundation when students are younger, like in primary school. It's also crucial to target inequity in education early on in a student's education because there is evidence of widening socioeconomic gaps in achievement as children get older (Feinstein et al., 2015; Caro, 2009). Even opportunity gaps at the elementary and middle-school level mean that white fourth-grade students are more than twice as likely as Black fourth grade students to be performing at grade level in math and reading (The Nation's Report Card, n.d.).

There are many contributing factors to inequity in education that ultimately all stem from a lack of adequate funding, but they all have a compounding financial impact on students' futures.

Possible approaches/interventions

Education reform in the United States has constantly been at the center of America's politics and has been an issue since the 1830s. Throughout the years, the literature on possible interventions to address inequity in education has expanded greatly. In this section, we will examine some possible interventions and assess their advantages and disadvantages.

The following section on levels of intervention is setting a framework for understanding. It explains the scopes of power that each government level in America's federal system has, and how that dictates how much they control and can contribute to helping the problem of inequity in education.

Level of intervention

⁴ 185 percent of the federal poverty level is the eligibility threshold for the federal assisted lunch program.

Level of intervention is the level of government—local, state, or federal—that should be creating, implementing, and enforcing policies that affect the common society. Before exploring possible approaches and solutions to the issue of inequity in education, it's first important to examine the success and effectiveness of education equity policies depending on the level of implementation. Each of these levels can make a difference. This section showcases which level policies would have the highest chance of success.

Since local governments have the most discretion with what is done with funding from federal educational grants, they have the greatest ability to directly affect students' education at public schools and have the most available personnel to ensure policies are being implemented efficiently and correctly. Moreover, local governments also control property taxes, which are large contributors to a district's total funding.

Education equity policies have a higher chance of being successful when implemented on the state level versus the federal level because state governments oversee a smaller number of districts and have more resources and staff to spare to ensure adherence to education equity standards in schools.

States have the reserved power of education. Although in the U.S. Constitution, citizens are not guaranteed a right to education, that's different in many state constitutions and has been recognized by many state courts. For instance, in the California Constitution or the Mississippi Constitution, the fundamental right to education is protected, and this right has been reinforced by state courts.

However, even at the state level, there are still obstacles to implementing education equity policies and programs. There is a large disproportionate gap in funding between states. For example, New York spends upwards of \$12,400 more per student than Idaho (Baker et al., 2018). State funding is still allocated disproportionately toward efforts to assess and evaluate rather than intervention (Jochim and Murphy, 2013). To combat these problems, the federal government can claim a bigger role for itself by incentivizing states to improve their education programs.

Even so, the federal government cannot just blindly increase funding for already existing programs like Title I. Poor students who do not receive Title I funding or resources score about the same on achievement tests as those who do (Ravitch and Loveless, 2000). The federal government needs to invest in developing strict evaluation guidelines to ensure consistent findings when studying which programs within Title I work and then using the results to strategically fund effective programs.

Currently, local governments hold the most power in implementing policies that promote educational equity because they determine property taxes, which is a large part of public school funding, while federal governments hold the least power because although they can incentivize state and thereby local governments with grants, they don't have any legislative authority over regulating the curriculum or makeup of public schools in America.

Increasing teacher pay and elevating the teaching profession

Teachers make 60 percent of what professionals with equivalent degrees do, a much lower percentage than that in other Organization for Economic Cooperation and Development (OECD) countries (OECD, 2017). Partly as a result of low teacher pay, recent graduates are avoiding the teaching profession and there are fewer qualified teachers choosing to teach at high-need schools (Carroll et al., 2012).⁵

Teacher turnover has a significant and negative effect on student achievement and is an even larger problem in schools that mainly serve low-income or minority students (Ronfeldt et al., 2013). Teacher pay has been shown to reduce turnover (Hendricks, 2013). Additionally, a University of Akron study by Enami and others found that a 1 percent increase in teachers' salaries in high-poverty districts led to a 2.5 percent increase in the math proficiency rate of high school graduates.

Still, it's important to note that research on increased teacher pay has not been consistent. For instance, researchers found that the \$575 million dollars the Bill & Melinda Gates Foundation and several school districts invested in teacher evaluation had little if any impact on student outcomes (Barnum, 2018).

However, the discourse over this issue starts to magnify when proponents start considering how teachers should be paid, which teachers should get increased pay, and what criteria teachers need to fulfill to be eligible for increased salaries.

School districts generally pay teachers based on their time in the field and their education level. However, some argue that it isn't fair to pay top-performing teachers the same salary as average teachers, even if they've been teaching for the same amount of time and have obtained the same level of education. This movement to base teacher salaries on their students' test scores has received backlash, especially from teacher union leaders, who argue that it's unfair to pay teachers based on student achievement because learning is also influenced by many out-of-school factors.

Generally, increased teacher pay is correlated with increased student achievement. Suppose high-need school districts receive additional funding to incentivize teachers with higher

⁵ Research done by The New Teacher Project, a nonprofit that has an interest in educational equity.

salaries to teach at their schools. In that case, the teaching profession may be revitalized and there will be a decrease in the turnover rate of qualified teachers.

Tutoring

Tutoring has been linked to large academic improvements for elementary school students, especially if they're behind in reading. Primary school students who received tutoring from trained peers and adults improved their reading comprehension by 4.4 times the average rate (U.S. Department of Education, 2001).

Tutoring services isn't a new approach to helping struggling students — in fact, it was already implemented on a large scale through Supplemental Educational Services (SES), a program established by the No Child Left Behind Act (NCLB). However, it wasn't very successful; SES had many implementation problems, including low participation rates, and was eventually phased out of Title I (Government Accountability Office (GAO), 2006; Burch, 2007).

However, there have been different approaches to tutoring in recent years. The SAGA Innovations is a national nonprofit that works with school districts to provide tutoring to students. Its programs have found that Chicago students who received intensive and individualized math tutoring gained more than two and a half years of math learning in one academic year (SAGA Innovations High Impact Tutoring, n.d.).⁶

To implement tutoring services on a large scale, there would need to be some requirements for the tutors to hold them accountable and ensure their tutees are receiving quality tutoring. For example, schools could require time commitments from tutors or directly provide tutors with the materials that students are working on. Moreover, tutoring programs that include research-based teaching correlate with improvements in reading (U.S. Department of Education, 2001), so training tutors to adopt this practice would be advantageous to students.

Though hiring instructors to provide individualized tutoring tutors could be expensive, there are ways to reduce costs. Schools can recruit volunteers, undergraduates interested in teaching careers, and recent college graduates. Teachers who want to participate could also be reimbursed for their additional time. Positive academic effects of peer tutoring when students are tutored by classmates or older students (Bowman-Perrott et al., 2013), which is cost-free and can translate to community service hours instead.

Tutoring may seem like an expensive option to hire an individual to work one-on-one with students, but there are many cost-effective ways that don't sacrifice quality.

⁶ Data is from SAGA, a company with financial interest in outside tutoring being implemented in schools.

Classroom size reduction

One way to optimize a student's education is classroom size reduction. Naturally, in a classroom with a smaller student-to-teacher ratio, students will be able to receive more one-on-one attention from the instructor. Moreover, classroom sizes have been found to be most effective when implemented in elementary grade levels.

Project STAR, an experiment in Tennessee that studied the effectiveness of classroom size reduction, found that kindergarten students in small classes (13–17 students) scored better than those in regular-size classes (22–25 students) (Mosteller, 1995). However, the improvements were relatively small in the first year that students were in smaller classes.

Although many studies have claimed the difference in classroom sizes to have a trivial effect, Krueger (1999) proposes that the results from Project STAR may be consistent with earlier econometric results because many of the earlier studies might not have been sensitive enough to detect the small effects of class size differences that the experiment did. He performed his own analysis by randomly assigning elementary school students to small classes and comparing their performance to their classmates in regular-sized classes. His data demonstrated that students in the smaller classes receive about 3 months more schooling than the students in the regular classes.

In addition, the positive effects of class size were the largest for Black students, economically disadvantaged students, and boys. Krueger estimates that the economic returns as a result of the class-size reduction in Tennessee were greater than the costs.

Extremely large class size reductions, such as a 32 percent reduction, can have significant long-term effects on academic achievement and other non-cognitive outcomes. These effects seem to be the most substantial when introduced in the earlier grades and for students from disadvantaged families, therefore why it's important to implement this intervention in primary schools (Chingos and Whitehurst, 2011).

Another study's results indicate that smaller kindergarten classes may build intuitive skills that are useful in a career but do not improve standardized test performance, which is why many studies discover trivial impacts to test scores (Chetty et al., 2011).

State policymakers should consider targeting classroom size reduction at students who have been shown to benefit the most: disadvantaged students in the early grades, or providing a certain amount of funding for classroom size reductions but leaving it up to school administrators to determine the exact parameters of how to reduce class sizes.

At the same time, it's important to note the influence that different factors can still have on student achievement that may offset the benefits of smaller classroom sizes. For instance, Jepsen and Rivken find that students who ended up in the classrooms of teachers new to their classrooms and grades suffered academically from the teacher's inexperience by almost the same amount as they benefited from being in a smaller class (Jepsen and Rivken, 2009).

It's also imperative to recognize that there have been few studies that have shown a substantial improvement in classrooms/students' futures after reducing class sizes in regard to test scores. The cost to reduce classroom size is complex: it requires more teachers and more available classrooms and only yields slight benefits. Many argue that it is more cost-effective to hire better-quality teachers.

Classroom size reduction has the potential to improve student achievement, but since many studies have only produced insignificant results, the benefits from this intervention could be easily offset by another factor in the classroom.

Equity funding

The current funding approach in most states puts schools serving low-income and minority students at a disadvantage. Research has found that school districts with the greatest concentrations of Black, Latino, or Native American students receive around \$1,800 less per student than districts with the lowest concentrations of students of color. The difference in funding between low-income and high-income areas is \$1,000 per student (Morgan, 2018).

Public school funding comes from different sources at the local, state, and federal level. Approximately 44 percent of a school's budget is contributed locally, primarily through the property taxes of homeowners in the area. Next, 48 percent comes from the state through revenue from sales tax and income taxes. The last eight percent comes from federal sources, like grants from federal programs like the Individuals with Disabilities Education Act (IDEA) (National Center for Education Statistics, 2010).

So how is each school district's funding determined? Each district's base funding is determined by the state government based on a formula. The state then determines the percentage of the total funding that the local government must pay, usually through property taxes. The state then uses its own revenue to complete the total funding amount initially determined by the formula. However, local governments can use their property tax revenue to increase funding to its desired level if there are excess funds, and in wealthier neighborhoods, there usually is a large surplus because of the higher property taxes. However, is this fair to students in low-income neighborhoods that their right to education only allows them a diluted right to education?

This common funding structure ties school dollars arbitrarily to the local real estate market rather than the needs of students and schools—which often means that lower property values in some districts translate to less funding for their schools compared to districts with more valuable property.

Although the majority of states place limits on local property taxes and some states have programs that allocate funding for schools in need of extra funding, inequities still persist because no state currently addresses the problem entirely. The solution lies in disassociating school funding from the value of local real estate.

According to Darling-Hammond, not only do funding systems allocate fewer resources to poor urban districts than to their suburban neighbors, but studies consistently show that, within these districts, schools with high concentrations of low-income and “minority” students receive fewer instructional resources than others in the same district (Darling-Hammond, 1998).

States could transition to a predominantly state-funded public education system and significantly reduce local funding. Funding could be based on a formula that depends on students’ educational needs, not the residents’ socioeconomic circumstances or real estate prices of that neighborhood. This would require increasing state revenue, whether through adding on to an already existing tax or creating a new one. For example, states could opt to replace a part of local property taxes with a new state property tax or enhance other common state taxes, such as income or sales taxes. This doesn’t require more funding, as local governments can just lower property taxes while the state institutes a new higher tax. It would only transition the reins from the hands of the local to the state level.

However, providing sufficient new revenue to ensure that no district receives less revenue under a revised system can be an expensive solution. In other words, if we wanted to ensure that all schools would be of the same quality as the best-funded schools in the state, then it would require much more funding.

One shortfall of this approach is that it will be difficult to get politicians on board. There is a “loser” and “winner” in this scenario. Politicians from more affluent congressional districts may not vote for an equity funding bill that supports this model of funding because their wealthier constituents might feel cheated out of their money.

For a less radical approach, states could allow local property tax to continue to play a role but use state dollars and policies to level the playing field so that communities with lower property values aren’t systematically disadvantaged—many states already implement a level of this.

Jennifer O’Neal Schiess, a partner at Bellwether’s Pandemic to Progress⁷ suggests two possible policies:

1. Set a limit on how much funding can come from local property tax revenue. This ensures that if there is excess revenue that “overflows from the cup” in more affluent neighborhoods, it won’t be able to go to the school.
2. Provide state-supplemented money to local districts to make up for the shortage of funding in low-income neighborhoods to match the funding in more affluent areas.

Some may argue that minimizing the influence that local property taxes have on their local school district’s funding and quality, it may lower the incentive for families/people to invest in certain real estate areas, making the affluent parts of the housing market plateau or suffer. Families will be more unwilling to purchase and reside in a house that costs more if the level of education they’re getting will be the same regardless of what neighborhood they live in. However, when families buy a house in a more expensive neighborhood, although the school may not be better than others, families can still reap the benefits of being in a more affluent neighborhood—safer neighborhoods, more community facilities, etc.—therefore, still getting a higher quality of life in general.

By providing equitable educational opportunities to the disadvantaged, wealthy homeowners are aiding the economy in the long run — a more educated society leads to a more productive and prosperous economy. As previously mentioned, increasing the nation’s high school graduation rate to 90 percent would result in a \$5.7 billion increase in GDP (Alliance for Excellent Education, 2017).

There are many ways to approach the problem of disproportionate funding — even within the equity funding sphere. Depending on the attitude of their constituents, policymakers can decide which intervention, whether more progressive or not, is the best for their area.

Conclusion

This paper has compiled a list of possible interventions that are commonly mentioned in education equity literature and examined both the benefits and drawbacks of each intervention. In regard to increased teacher pay, there has been conflicting research about whether it’s a useful or ineffective use of money. In regards to tutoring, many studies have shown great increases in student achievement when this intervention is applied, but it also calls into question if hiring and training enough tutors for an entire school is too expensive of a solution. With classroom size reduction, Project STAR demonstrated both increased academics and non-cognitive skills; however, there are still many studies disputing its unclear impacts. Next, equity funding targets the root cause of inequity in education but may be too radical of an approach for policymakers to

⁷National nonprofit aimed at education reform

implement without previous intermediary steps. By comparing different approaches instead of focusing on just one, this paper allows comparisons between their costs, examinations of what part of inequity in education they're targeting, and which intervention might have the most positive impact on educational equity.

Future research on educational equity could include studies that follow students all throughout their K–12 education, the ethics of equity funding, or using different theories (like, for example, the capabilities approach) to think about what classrooms need. Additionally, researchers should emphasize out-of-school factors like school building quality or lack of sleep due to long commutes as reasons why students in low-income neighborhoods might not perform as well as they should. Studying differences in levels of intervention—for example, local, state, and federal—could also be influential. Research on the standards for Common Core curriculum and what changes they need would be helpful — policymakers would then know how to effectively centralize the education system but still stay within its scope of power.

Additionally, in line with future research, policymakers can also implement policies by citing pre-existing research like that of which is included in this paper, or they can take inspiration from the future research topics suggested above. They could include an advisory panel of experts, like historians, economists, scholars and researchers, and behavioral scientists to understand and address all facets of the educational inequity issue. With the advice from an advisory panel, policymakers can establish a set of standards for local school districts to refer to and/or consider changing school starting times to be better for sleep. They could also pass legislation that doesn't necessarily prescribe additional resources or funding for schools, but protects education as a right — for instance, an amendment to the state constitution.

Equity funding is a strategic approach for policymakers to pursue as it addresses the root cause of inequity. Once the lack of funding is rectified, then school districts will have the means necessary to implement other interventions.

From an ethical standpoint, it's important to recognize that allowing local real estate prices to significantly determine funding for local schools reinforces the impact of decades of housing and zoning policies and de facto segregation, and subsequently “lottery of birth.” The current reality disadvantages communities who need more, not less, support to ensure equitable opportunities.

Works Cited

“2022 Grade 3 FSA ELA Results Packet.” *Florida Department of Education*, fldoe.org. Accessed 15 Aug. 2022.

Alexander, Karl L., et al. “Lasting Consequences of the Summer Learning Gap.” *American Sociological Review*, 2007. ERIC, <https://doi.org/10.1177/000312240707200202>.

Alliance for Excellent Education. “The Graduation Effect: Every Student’s Potential to Impact a Community.” *The Graduation Effect: Every Student’s Potential to Impact a Community*, Oct. 2012, impact.all4ed.org/Infographics/State/AK-GradEffect-Infographic-FINAL.PDF.

Baker, Bruce D., Danielle Farrie, and David Sciarra. 2018. “Is School Funding Fair? A National Report Card”, 7th Edition. www.schoolfundingfairness.org.

Barnum, Matt. “The Gates Foundation Bet Big on Teacher Evaluation. The Report It Commissioned Explains How Those Efforts Fell Short. - Chalkbeat: Essential Education Reporting across America.” *Chalkbeat*, 27 Jan. 2020, www.chalkbeat.org/2018/6/21/21105193/the-gates-foundation-bet-big-on-teacher-evaluation-the-report-it-commissioned-explains-how-those-eff.

Bowman-Perrott, Lisa, et al. “Academic Benefits of Peer Tutoring: A Meta-Analytic Review of Single-Case Research.” *School Psychology Review*, edited by Cynthia Anderson, vol. 42, no. 1, 2013, pp. 39–55. Crossref, <https://doi.org/10.1080/02796015.2013.12087490>.

Burch, Patricia, et al. “Supplemental Educational Services and NCLB: Policy Assumptions, Market Practices, Emerging Issues.” *Educational Evaluation and Policy Analysis*, vol. 29, no. 2, 2007, pp. 115–33. Crossref, <https://doi.org/10.3102/0162373707302035>.

Caro, Daniel H., et al. “Socio-Economic Status and Academic Achievement Trajectories from Childhood to Adolescence.” *Canadian Journal of Education / Revue Canadienne de l’éducation*, vol. 32, no. 3, 2009, pp. 558–90. JSTOR, <http://www.jstor.org/stable/canajeducrevucan.32.3.558>. Accessed 17 Aug. 2022.

Chetty, R., et al. “How Does Your Kindergarten Classroom Affect Your Earnings? Evidence from Project Star.” *The Quarterly Journal of Economics*, vol. 126, no. 4, 2011, pp. 1593–660. Crossref, <https://doi.org/10.1093/qje/qjr041>.

Darling-Hammond, Linda. “Unequal Opportunity: Race and Education.” *Brookings*, 28 July 2016, www.brookings.edu/articles/unequal-opportunity-race-and-education.

Department of Education, Washington D.C. Planning and Evaluation Service. *Evidence That Tutoring Works*, 2001, <https://eric.ed.gov/?id=ED464343>. Accessed 22 Aug. 2022

Enami, Ali, et al. "Labor versus Capital in the Provision of Public Services: Estimating the Marginal Products of Inputs in the Production of Student Outcomes." *Economics of Education Review*, 2021, <https://doi.org/10.1016/j.econedurev.2021.102131>.

Hendricks, Matthew D. "Does It Pay To Pay Teachers More? Evidence From Texas". *Journal Of Public Economics*, vol 109, 2014, pp. 50-63. Elsevier BV, doi:10.1016/j.jpubeco.2013.11.001. Accessed 15 Aug 2022.

Hershbein, Brad. "A College Degree Is Worth Less If You Are Raised Poor." *Brookings*, 29 July 2016, www.brookings.edu/blog/social-mobility-memos/2016/02/19/a-college-degree-is-worth-less-if-you-are-raised-poor.

Jackson, C. Kirabo, et al. "The Effects of School Spending on Educational and Economic Outcomes: Evidence from School Finance Reforms." *The Quarterly Journal of Economics*, vol. 131, 2015, <https://doi.org/10.3386/w20847>.

Jepsen, Christopher, and Steven Rivkin. "Class Size Reduction and Student Achievement: The Potential Tradeoff between Teacher Quality and Class Size." *The Journal of Human Resources*, vol. 44, no. 1, 2009, pp. 223–50. *JSTOR*, <http://www.jstor.org/stable/20648893>. Accessed 20 Aug. 2022.

Jochim, Ashley, and Patrick Murphy, *The Capacity Challenge: What It Takes for State Education Agencies to Support School Improvement* (Seattle: Center on Reinventing Public Education, December 2013).

Krueger, Alan B., and Diane M. Whitmore. "The Effect of Attending a Small Class in the Early Grades on College-Test Taking and Middle School Test Results: Evidence from Project STAR." *The Economic Journal*, vol. 111, no. 468, 2001, pp. 1–28. *JSTOR*, <http://www.jstor.org/stable/2667840>. Accessed 20 Aug. 2022.

Loveless, Diane Ravitch And Tom. "Broken Promises: What the Federal Government Can Do To Improve American Education." *Brookings*, 28 July 2016, www.brookings.edu/articles/broken-promises-what-the-federal-government-can-do-to-improve-american-education.

Morgan, Ivy. "Funding Gaps 2018." *The Education Trust*, 27 Feb. 2018, edtrust.org/resource/funding-gaps-2018.

Mosteller, Frederick. "The Tennessee Study of Class Size in the Early School Grades." *The Future of Children*, vol. 5, no. 2, 1995, p. 113. Crossref, <https://doi.org/10.2307/1602360>.

National Center for Education Statistics. "Do Rich and Poor Districts Spend Alike?" *National Center for Education Statistics*, Dec. 1996, nces.ed.gov/pubs/web/97916.asp.

"No Child Left Behind Act: Education Actions Needed to Improve Local Implementation and State Evaluation of Supplemental Educational Services." *U.S. GAO*, www.gao.gov/products/gao-06-758. Accessed 20 Aug. 2022.

OECD (2017), *Education at a Glance 2017: OECD Indicators*, OECD Publishing, Paris, <https://doi.org/10.1787/eag-2017-en>.

"Oregon Department of Education : Assessment Group Reports : Student Assessment : State of Oregon." *Assessment Group Reports : Oregon Department of Education*, www.oregon.gov/ode/educator-resources/assessment/Pages/Assessment-Group-Reports.aspx. Accessed 15 Aug. 2022.

Squire, Juliet. "From Pandemic to Progress: Eight Bellwether Briefs Set Long-Term Visions for Education Policy and Practice." *Bellwether*, 26 Aug. 2022, <https://bellwether.org/blog/from-pandemic-to-progress-eight-bellwether-briefs-set-long-term-visions-for-education-policy-and-practice-2/>.

The Annie E. Casey Foundation. (2010). *Early Warning! Why Reading by the End of Third Grade Matters*. Baltimore, MD: Leila Fiester. Retrieved from www.aecf.org.

The Annie E. Casey Foundation. (2012). *Double Jeopardy!*. Baltimore, MD: Donald J. Hernandez. Retrieved from www.aecf.org.

The Irreplaceables. Understanding the Real Retention Crisis in America's Urban Schools. Rep. Brooklyn: TNTP, 2012

The Nation's Report Card. (n.d.). *NAEP Reading Report Card: National Achievement-Level Results (4th grade)*. Retrieved August 16, 2022, from <https://www.nationsreportcard.gov/reading/nation/achievement/?grade=4>

U.S. Department of Education, National Center for Education Statistics, "Revenues and Expenditures for Public Elementary and Secondary Education: School Year 2007-08," 2010.

Whitehurst, Matthew Chingos And Grover. "Class Size: What Research Says and What It Means for State Policy." *Brookings*, 10 May 2017,
www.brookings.edu/research/class-size-what-research-says-and-what-it-means-for-state-policy.