

To: U.S. Department of Education
From: The Learning Policy Institute
RE: Docket No.: ED–2019–ICCD–0119, Mandatory Civil Rights Data Collection
Date: November 15, 2019

The Learning Policy Institute (LPI) appreciates the opportunity to provide comments to the U.S. Department of Education (the Department) regarding the mandatory biannual Civil Rights Data Collection (CRDC) and the proposed elimination of key questions. LPI conducts and communicates independent, high-quality research to improve education policy and practice. Working with policymakers, researchers, educators, community groups, and others, LPI seeks to advance evidence-based policies that support equitable and empowering learning for each and every child. LPI is deeply concerned with the Department’s proposal to eliminate critical data collected by the CRDC and strongly urges the Department to maintain the collection of these data.

To shed light on the extent to which inequities in opportunities to learn exist at the state and local levels, and inform the appropriate remedies, the Department’s Office for Civil Rights collects data on a variety of information pertaining to school resources and student experiences. This dataset has been collected every 2 years from all public schools and school districts in the United States since 1968. The CRDC collects a wide range of data that can be used to measure opportunities to learn and examine equitable access for students. These opportunities include children’s access to early education programs and student access to a college preparatory curriculum, resources, staff, and inclusive learning environments. These data are reported overall and disaggregated by race/ethnicity, disability status, gender, English learner status, and other student characteristics, which allows researchers and policymakers to monitor potential inequities in access to learning opportunities. Under the Every Student Succeeds Act (ESSA), many of these data are also included on state and local report cards providing useful information for parents, advocates, and practitioners. However, not all states and districts are currently reporting all of the data required under ESSA. Maintaining this information within the CRDC is critical to supporting state and district compliance with ESSA and to ensuring this information is easily accessible to the public.

Despite the importance and utility of the data collected to researchers, advocates, and policymakers, the Department is proposing to limit the data collected through the CRDC, including eliminating questions related to educator experience and attendance, school funding, and children’s access to high-quality early childhood, preschool, and kindergarten programs. These indicators provide crucial data on access to general early childhood and preschool services and programs. The loss of these data would negatively impact the availability of important information to the public. The public uses these data for a variety of purposes, including effectively targeting resources, closing gaps in educational opportunities, and informing school improvement efforts.

For these and the following reasons, LPI strongly recommends that the questions proposed for elimination be retained in the CRDC.

Student Access to Quality Teachers

Teacher Experience

Teachers are the school-based staff who spend the most time with students, and research shows that their qualifications and experience matter for students' learning opportunities, well-being, and academic outcomes.¹ Not all teacher characteristics have the same impact, and not all of the characteristics that matter are represented in national datasets. However, two important teacher characteristics—certification and experience—are represented in the CRDC. Nevertheless, the Department is proposing to eliminate from the CRDC information regarding one of these important characteristics—the number of full-time teachers in their first or second year of teaching.

Research shows that a teacher's years of experience in the classroom have an impact on student success. A synthesis of 30 studies analyzing the effect of teaching experience on student outcomes found that teaching experience is positively associated with student achievement gains throughout a teacher's career.² Gains in teacher effectiveness associated with experience are steepest in teachers' initial years.³ Multiple studies show that novice teachers with fewer than three years of experience are associated with lower student achievement and that these teachers are concentrated in high-poverty schools.⁴

A recent study in California examined the factors most strongly associated with student achievement in school districts, taking into account several measures of student socioeconomic status. This study identified California positive outlier districts—those in which students of color, as well as White students, consistently achieve at higher levels than students from similar racial/ethnic backgrounds and from families of similar income and education levels in most other districts. These results are predicted, in significant part, by the qualifications of districts' teachers, as measured by their experience and certification. The study found that teaching experience is associated with increased achievement, especially for students of color.⁵

There are additional benefits to teacher experience beyond student achievement. Students benefit from being taught by experienced teachers not only in academic performance, measured by test scores, but also in other measures of success, such as school attendance.⁶ Experienced teachers also benefit other teachers in their schools. Teachers whose colleagues are more experienced are more effective than those whose colleagues are less experienced, suggesting that more experienced teachers provide important additional benefits to their school communities beyond increased learning for the students they teach.⁷ Schools with large proportions of inexperienced teachers (often the highest-poverty schools) have limited numbers of experienced mentor teachers to support the development of new teachers.⁸

The CRDC provides data on the extent of any inequities in student access to experienced teachers. For example, a forthcoming report by LPI based on an analysis of the CRDC—using the same data currently proposed for elimination—shows that from 2014 to 2016, first- and second-year teachers composed a greater share of the teaching staff in schools with high proportions of students of color compared to schools with low proportions of students of color. In schools with high enrollment of students of color, nearly one in every six teachers is just

beginning his or her career compared with one in every ten teachers in schools with low enrollment of students of color. In addition, the proportion of new teachers in the profession grew for schools with high percentages of students of color between 2014 and 2016. The proportion did not change for schools with low percentages of students of color.

The availability of these data allows researchers to reveal inequities in student access to experienced teachers and provides the information needed for advocates to seek changes in policy. Policymakers can in turn use these data to target the necessary resources to support high-quality teacher preparation, induction, and mentoring programs for early career teachers that have proved effective in improving teacher effectiveness and retention.⁹

Teacher Chronic Absenteeism

Another measure of student access to quality instruction is the extent to which a student's teacher is present to provide instruction. The CRDC collects information on the percentage of teachers who are chronically absent, meaning they miss 10 or more school days.¹⁰ A teacher is considered absent if he or she is not in attendance on a day in the regular school year when the teacher would otherwise be expected to be teaching students in an assigned class. This includes days taken both for sick leave and personal leave but does not include professional development.¹¹

Data on teacher absenteeism is important, as research demonstrates a relationship between chronically absent teachers and lower student outcomes.¹² When teachers are absent, students are taught by substitute teachers who do not provide the same level of instruction as full-time staff.¹³ Analysis of the data by the Education Week Research Center show that more than 6.5 million students in 2013–14 attended a school where at least half of the teachers were chronically absent.¹⁴ The concentration of schools with over 50% of teachers missing 10 or more days was revealed again in the 2015–16 CRDC data, with a similar analysis finding that nearly a quarter of a million students attended schools at which most teachers were deemed to be chronically absent.¹⁵ In the 2015–16 school year, 28% of teachers were chronically absent (up from 27% during the 2013–14 school year).¹⁶

Finding and placing qualified substitute teachers for these classrooms can be a particular challenge when a large number of teachers are absent, putting a strain on school districts.¹⁷ These staffing decisions can impact student safety, school climate, and teacher retention. Collecting data on the number and concentration of chronically absent teachers provides important information for states, districts, and schools to address any teacher attendance issues by providing the resources and supports needed to ensure all schools are sufficiently staffed throughout the year.

School Finance

Research shows that public schools in the United States are among the most inequitably funded of any in the industrialized world.¹⁸ These funding inequities result in differences in a student's opportunity to learn, including access to quality instruction. To help reveal these inequities, the CRDC provides extensive school-level funding data, including information on teacher and other school personnel salaries, staff-to-student ratios, and personnel and non-personnel expenditures.

Despite the importance of these data for revealing funding inequities, the Department is proposing to eliminate all school finance–related data.

Teacher Salaries

The school finance data the Department proposes for elimination includes teacher salary information. Research shows that federal, state, and local investments in instruction, especially in high-quality teachers, appear to leverage the largest marginal gains in student performance.¹⁹ There is a demonstrated relationship between the ability to attract and retain high-quality teachers and teacher salary. Studies show that variations in teacher salaries result in differences in teacher quality at that school level. These variations in teacher quality, in turn, are associated with differences in student outcomes.²⁰ Studies show that skilled teachers are the most critical of all schooling inputs, and while overall expenditures have a positive effect, investments in teacher salaries leading to more qualified teachers have a larger marginal effect on achievement gains than other uses of the dollar.²¹

Teacher salaries influence the extent to which a district or school can attract and retain quality teachers. Research shows that district starting salaries and structures can influence whether the district is an attractive employer for new and experienced teachers²² and their decision to either enter or remain in the profession.²³ Teacher salaries also have an effect on the quality of preparation teachers bring with them.²⁴ For example, states in which teachers' salaries rose the most during the 1980s witnessed the greatest increase in the quality of teachers relative to non-teachers as measured by the quality of undergraduate education.²⁵ Information on teacher salaries can be used to set salaries at a level that supports all schools in attracting and retaining high-quality teachers and close any within state gaps in teacher salaries across districts.

Per-Pupil Ratios

In addition to salary information, the Department's proposal would eliminate the data on per-pupil ratios for teachers and aides. A sizable body of research has illustrated the connection between staffing qualities and quantities and student outcomes.²⁶ For example, a significant body of research points to the effectiveness of class-size reduction for improving student outcomes and reducing gaps among students, especially for younger students and those who have been previously low-achieving.²⁷ These reductions for young children have long-term effects on outcomes many years into the future.²⁸ Often, studies find that the effects of class-size reduction on achievement are greatest when certain smaller class thresholds (such as 15 or 18) are reached and are most pronounced for students of color and those in schools serving concentrations of students in poverty.²⁹

The Department's proposal would also eliminate data on per-pupil ratios for support services in addition to other school-based staff. Research on meeting students' social, emotional, and academic needs identifies how important it is to develop strong adult student relationships and for students to receive multi-tiered systems of support.³⁰ For example, these supports ensure that children who have faced serious adversity and trauma have sufficient access to student support teams, such as on-site pupil services personnel (e.g., social workers, school psychologists, counselors, and nurses) who are skilled in culturally competent academic and behavioral

assessment, care coordination, and family engagement. Developing these types of relationships and providing these types of services are challenged when staff-to-student ratios are high. Data on the staff-to-student ratios provides information on the opportunities students have to receive personalized instruction, develop strong relationships, and receive the appropriate services based on their needs.

Non-Personnel and Personnel Expenditures

The school finance data proposed for elimination also provides information on non-personnel and personnel expenditures. Inequities in per-pupil spending matter greatly for educational outcomes. Research shows that, in the aggregate, per-pupil spending is positively associated with improved student outcomes.³¹ Specifically, the availability of state and local datasets and advances in statistical methods have supported a number of studies that show that when more money is spent on education, especially for students from low-income families, achievement and graduation rates improve, along with life outcomes such as employment, wages, and reduced poverty rates.

The amount of money a district is able to spend on operations determines the staffing ratios, class sizes, and wages a local public school district is able to pay.³² In most cases, a district's ability to raise revenues is a function of both local taxable property wealth and the incomes of local property owners, thus their ability to pay taxes on their properties. Without sufficient targeted investments from the state, then, school revenues vary by the wealth of those who live in different districts—with wealthier districts having more money to spend than poor ones. States have the ability to offset these inequalities through increased investments in the education system and by implementing school finance systems that equitably allocate funds across functions and different districts. Therefore, understanding the extent to which federal, state, and local funds are available and how they are used is vital to closing gaps in student access to a quality education.

While the Every Student Succeeds Act requires states to report the per-pupil expenditures of each district and school, including actual personnel and non-personnel expenditures, disaggregated by source of funds (federal, state, and local), these data are not as comprehensive as the data collected by the CRDC. And unlike the CRDC, there are fewer parameters regarding how key elements are defined, collected, and reported, making it difficult to compare data across states. Further, while estimates of some of these data can be roughly calculated from information collected by the National Center for Education Statistics (NCES), the raw data would no longer be available to researchers, limiting the extent of any analysis. These types of funding analyses are vital to advocacy and policymaker efforts to create more equitable funding systems that ensure that every district and school has the resources they need to invest in quality teachers.

Children's Access to Early Childhood Services and Programs

Access to ECE Programs

The CRDC collects information on the extent to which districts provide early childhood services or programs to children birth through age 5. There is overwhelming evidence that children's early years are a crucial time for their development. Researchers across a wide range of

disciplines—program evaluators, neuroscientists, geneticists, and economists—agree that early childhood education (ECE) has the potential to support optimal development and ensure all children start kindergarten ready to succeed.³³ High-quality ECE can give children a strong start on the path that leads to college or a career, fostering meaningful advantages in school readiness as well as long-term benefits, such as lower rates of special education placement, reduced grade retention, and higher graduation rates.³⁴ These benefits are especially pronounced for children experiencing poverty or those who are dual language learners.³⁵ As a result, access to early childhood and preschool services and programs are critical civil rights indicators for access to educational opportunity. Without these data, there will be no way to estimate how many children and families have access to public ECE services or programs—information that is particularly useful for federal, state, and local policymakers when making decisions regarding how much to invest and where to make those investments.

ECE Program Coverage and Cost to Families

The CRDC also collects information on whether a district’s preschool services and kindergarten programs are full or partial day and whether there is full, partial, or no charge. These indicators provide information on educational opportunity revealing the extent to which infants, toddlers, and young children have full-time access to affordable services and programs as it relates to coverage and cost.

Regarding service and program coverage, there is strong and mounting evidence that current half-day, partial-year programs offer too little learning time to produce strong child outcomes. Research suggests that a 3.5-hour day is too short for children to receive the targeted instruction they need in order to be prepared for kindergarten. Numerous studies on kindergarten find children learn more in full-day kindergarten than half-day kindergarten.³⁶ It is very difficult for a half-day program to provide sufficient time for teachers to conduct learning activities and intentional instruction in small-group and one-on-one interactions in the areas of skill development experts believe are important to later school success. For example, one study found that children who attended prekindergarten for 8 hours per day for 45 weeks had improved almost twice as much on vocabulary and math skills compared with the children who attended 2.5 to 3 hours per day for 41 weeks.³⁷ Additional research has also found that full-day kindergarten particularly helped narrow the achievement gap for dual language learners.³⁸

Program cost and length of day can also be serious barriers for many families to accessing the educational opportunities of preschool and kindergarten programs. Regarding cost, early care and education is one of the most significant expenses in a family’s budget. Across the nation, the cost of early care and education exceeds the cost of housing, college tuition, transportation, or food for many families.³⁹ Without support, high-quality early education and preschool programs are unaffordable for low-income families.⁴⁰ Additionally, partial-day programs do not meet the needs of working families because preschool and kindergarten programs also serve as their child care.⁴¹ For most parents, it is infeasible to pick their children up after a half-day preschool or kindergarten session and take them to another provider for the afternoon. Without this data, there will be no way to estimate how many children and families have access to programs that have been shown to reduce disparities in educational opportunities.

Equity and Inclusion in Early Childhood Education

The CRDC also includes information regarding access to services and programs for historically underserved children. This includes data regarding the extent to which a district's preschool services or programs are offered to all children, specifically children with disabilities, from low-income families, and attending Title I schools. Studies that have examined the long-term outcomes of children's participation in high-quality early education find evidence of positive impacts on reducing grade retention and special education placements in late elementary and middle school.⁴² Moreover, children from disadvantaged backgrounds, including children with disabilities and those experiencing poverty, have been found to reap the largest, most long-lasting benefits from participation in high-quality early education programs.⁴³

These data are fundamental to understanding inclusion in preschool services and programs. There is a large body of research evidence that indicates that inclusion in early childhood and preschool programs is beneficial to children with and without disabilities.⁴⁴ Without these data, there will be no way to analyze how many children have access to inclusive preschool services and to assess exclusive preschool services and programs that violate children's rights to educational opportunities.

In addition, research has found that children in inclusive, diverse classrooms are likely to show greater gains in their academic skills and greater social acceptance than children in homogeneous classrooms, regardless of their own socioeconomic status and race/ethnicity.⁴⁵ Although research on classroom-level diversity in ECE is somewhat limited, studies have found that segregated programs serving children of color, especially in communities of concentrated poverty, are more likely to be lower in quality than diverse classrooms.⁴⁶

Information related to program and service access based on race, gender, or disability status would also be lost were the proposed questions removed. The Department's proposal to no longer collect total preschool student enrollment count by sex and race/ethnicity, English learner, and IDEA status would remove data critical to identifying gaps in access to such programs. Understanding the extent to which children are served would also be limited. Without subgroup counts, this data cannot be analyzed for disparities and disproportionality in who is able to access services and programs. This data is also critical for assessing compliance with several civil rights statutes, including the Civil Rights Act of 1964, which prohibits discrimination based on race, color, and national origin; Title IX of the Education Amendments of 1972, which prohibits discrimination based on sex; and Section 504 of the Rehabilitation Act of 1973, which prohibits discrimination on the basis of disability.

Discipline Disparities

The Department is also proposing to eliminate disaggregated preschool enrollment data. The elimination of these data would make it extremely difficult to determine any disparities in preschool suspension and expulsion rates. Children who are disproportionately suspended or expelled miss instructional time and are at greater risk of disengagement and diminished educational opportunities.⁴⁷ Early expulsions and suspensions predict later expulsions and suspensions, and children who are expelled or suspended are as much as 10 times more likely to

experience academic failure and grade retention, drop out of high school, and face juvenile incarceration than those who are not.⁴⁸ These negative associations suggest that exclusionary discipline policies in early childhood provide a point of entry into the school-to-prison pipeline well before children enter kindergarten.⁴⁹

Not only are these exclusionary policies ineffective, but they are often applied in a discriminatory manner, including in preschool settings. According to disaggregated data provided by the CRDC, during the 2013–14 school year African American children represented 19% of public preschool enrollment and 47% of those who received more than one out-of-school suspension. By contrast, White students represented 41% of public preschool enrollment and 28% of such children who received more than one out-of-school suspension.⁵⁰ A study that includes both private and public preschool programs reveals similar disparities—African American preschoolers are 2.2 times more likely to be suspended or expelled than are other children.⁵¹

Research has found that these racial disparities in discipline rates are not explained by actual, observed differences in children’s behavior; they are instead a function of program and teacher factors.⁵² Studies show that preschool and kindergarten teachers are more likely to rate relationships with students of their same ethnicity more positively⁵³ and that African American children are more than twice as likely to be recommended for suspension or expulsion than are their white peers for similar behaviors.⁵⁴ The CRDC is the primary source of data on the extent to which students of color, and other historically underserved students, are suspended or expelled from preschool settings. These data are necessary to identify where disparities in the use of exclusionary discipline policies exist to target the appropriate interventions and supports.

The data proposed for elimination, including data related to teacher experience, expenditure, and chronic absenteeism and access to early childhood services and programs, including disaggregated preschool data, provide information to researchers, advocates, and practitioners on where progress is being made and where gaps in opportunity still exist. For policymakers, these data can be used to identify where best to target federal, state, and local resources. LPI strongly urges the Department to maintain the collection of these critical sets of data, and we appreciate your consideration.

Please contact Jessica Cardichon at jcardichon@learningpolicyinstitute.org for any additional information.

Endnotes

¹ Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. (2006). How changes in entry requirements alter the teacher workforce and affect student achievement. *Education Finance & Policy*, 1(2), 176–216; Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2007). *How and why do teacher credentials matter for student achievement?* (NBER Working Paper No. 12828). Cambridge, MA: National Bureau of Economic Research; Goe, L. (2007). *The link between teacher quality and student outcomes: A research synthesis*. Washington, DC: National Comprehensive Center for Teacher Quality; Ladd, H. F., & Sorensen, L. C. (2017). Returns to teacher experience: Student achievement and motivation in middle school. *Education Finance and Policy*, 12(2), 241–279; Podolsky, A., Darling-Hammond, L., Doss, C., & Reardon, S. (2019). *California's positive outliers: Districts beating the odds*. Palo Alto, CA: Learning Policy Institute.

² Kini, T., & Podolsky, A. (2016). *Does teaching experience increase teacher effectiveness? A review of the research*. Palo Alto, CA: Learning Policy Institute.

³ See Papay, J. P., West, M. R., & Fullerton, J. B. (2012). Does an urban teacher residency increase student achievement? Early evidence from Boston. *Educational Evaluation and Policy Analysis*, 34(4), 413–434; Henry, G. T., Bastian, K. C., & Smith, A. A. (2012). Scholarships to recruit the “best and brightest” into teaching: Who is recruited, where do they teach, how effective are they, and how long do they stay? *Educational Researcher*, 41(3), 83–92; Ingersoll, R. M., & Strong, M. (2011). The impact of induction and mentoring programs for beginning teachers: A critical review of the research. *Review of Educational Research*, 81(2), 201–233; Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Palo Alto, CA: Learning Policy Institute; Guha, R., Hyler, M. E., & Darling-Hammond, L. (2016). *The teacher residency: An innovative model for preparing teachers*. Palo Alto, CA: Learning Policy Institute.

⁴ Rice, J. K. (2010). *The impact of teacher experience: Examining the evidence and policy implications*. (Brief No. 11). Washington, DC: Urban Institute and National Center for Analysis of Longitudinal Data in Education Research; Atteberry, A., Loeb, S., & Wyckoff, J. (2017). Teacher churning: Reassignment rates and implications for student achievement. *Educational Evaluation and Policy Analysis*, 39(1), 3–30.

⁵ Podolsky, A., Darling-Hammond, L., Doss, C., & Reardon, S. (2019). *California's positive outliers: Districts beating the odds*. Palo Alto, CA: Learning Policy Institute.

⁶ Ladd, H. F., & Sorensen, L. C. (2017). Returns to teacher experience: Student achievement and motivation in middle school. *Education Finance and Policy*, 12(2), 241–279.

⁷ Kini, T. & Podolsky, A. (2016). *Does teaching experience increase teacher effectiveness? A review of the research*. Palo Alto, CA: Learning Policy Institute.

⁸ Loeb, S., Darling-Hammond, L., & Luczak, J. (2005). How teaching conditions predict teacher turnover. *Peabody Journal of Education*, 80(3), 44–70.

⁹ Espinoza, D., Saunders, R., Kini, T., & Darling-Hammond, L. (2018). *Taking the long view: State efforts to solve teacher shortages by strengthening the profession*. Palo Alto, CA: Learning Policy Institute.

¹⁰ U.S. Department of Education. (2018). *Civil Rights Data Collection (CRDC) for the 2015–16 school year*. Washington, DC: Author.

¹¹ U.S. Department of Education. (2018). *2017–18 Civil Rights Data Collection: List of CRDC data elements for school year 2017–18*. Washington, DC: Author. <https://www2.ed.gov/about/offices/list/ocr/docs/2017-18-crdc-data-elements.pdf>.

¹² Miller, R. T., Murnane, R. J., & Willett, J. B. (2008). Do teacher absences impact student achievement? Longitudinal evidence from one urban school district. *Educational Evaluation and Policy Analysis*, 30(2), 181–200.

¹³ Miller, R. (2018). *Teacher absenteeism, substitute shortages, and student achievement*. Washington, DC: FutureEd. <https://www.future-ed.org/work/teacher-absenteeism-substitute-shortages-and-student-achievement/>.

¹⁴ Sparks, S. (2016). *1 in 4 teachers miss 10 or more school days, analysis finds*. Bethesda, MD: Education Week. <https://www.edweek.org/ew/articles/2016/06/27/1-in-4-teachers-miss-10-or.html>.

-
- ¹⁵ Harwin, A. (2018, June 5). How many teachers are chronically absent from class in your state? [Blog post]. Education Week. http://blogs.edweek.org/edweek/inside-school-research/2018/06/chronic_absenteeism_teachers.html.
- ¹⁶ U.S. Department of Education. (2016). *Civil Rights Data Collection (CRDC) for the 2013–14 school year*. Washington, DC: Author.
- ¹⁷ Miller, R. (2018). *Teacher absenteeism, substitute shortages, and student achievement*. Washington, DC: FutureEd. <https://www.future-ed.org/work/teacher-absenteeism-substitute-shortages-and-student-achievement/>.
- ¹⁸ Baker, B. D. (2017). *How money matters for schools*. Palo Alto, CA: Learning Policy Institute.
- ¹⁹ Ferguson, R. F. (1991). Paying for public education: New evidence on how and why money matters. *Harvard Journal on Legislation*, 28(2), 465–498; 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* (pp. 265–298). Washington, DC: Brookings Institution; Betts, J. R., Rueben, K. S., & Danenberg, A. (2000). *Equal resources, equal outcomes? The distribution of school resources and student achievement in California*. San Francisco, CA: Public Policy Institute of California.
- ²⁰ Adamson, F. & Darling-Hammond, L. (2011). *Speaking of salaries: What it will take to get qualified, effective teachers in all communities*. Washington, DC: Center for American Progress.
- ²¹ Ferguson, R. F. (1991). Paying for public education: New evidence on how and why money matters. *Harvard Journal on Legislation*, 28(2), 465–498.
- ²² Pogodzinski, J. M. (2000). *The teacher shortage: Causes and recommendations for change*. San Jose, CA: Department of Economics, San Jose State University.
- ²³ Dolton, P. J. & Makepeace, G. (1993). Female labour force participation and the choice of occupation: The supply of teachers. *European Economic Review*, 37(7), 1393–1411; Hanushek, E. & Pace, R. (1995). Who chooses to teach (and why)? *Economics of Education Review*, 14(2), 101–117; Manski, C. F. (1987). “Academic Ability, Earnings, and the Decision to Become a Teacher: Evidence From the National Longitudinal Study of the High School Class of 1972” in Wise, D. A. (Ed.). *Public Sector Payrolls*. Chicago, IL: University of Chicago Press; Stinebrickner, T. R. (2002). An analysis of occupational change and departure from the labor force: Evidence of the reasons that teachers quit. *Journal of Human Resources*, 37(1), 192–216.
- ²⁴ Figlio, D. (1997). Teacher salaries and teacher quality. *Economics Letters*, 55(2), 267–271.
- ²⁵ DeAngelis, K. J. (2000). *The relationship between teachers’ salaries and the quality of the supply of recent college graduates to teaching*. Ph.D. dissertation, Stanford University.
- ²⁶ Baker, B. D. (2014). *America’s most financially disadvantaged school districts and how they got that way: How state and local governance causes school funding disparities*. Washington, DC: Center for American Progress.
- ²⁷ Baker, B. D. (2016). *Does money matter in education?* Washington, DC: Albert Shanker Institute; Finn, J. D., & Achilles, C. M. (2009). Tennessee’s class size study: Findings, implications, misconceptions. *Educational Evaluation and Policy Analysis*, 21(2), 97–109; Finn, J. D., Gerber, S. B., Achilles, C. M., & Boyd-Zaharias, J. (2001). The enduring effects of small classes. *Teachers College Record*, 103(2), 145–183; Krueger, A. (2001). *Would smaller class sizes help close the black-white achievement gap?* (Working paper #451). Princeton, NJ: Industrial Relations Section, Department of Economics, Princeton University; Levin, H. M. (2007). The public returns to public educational investments in African American males. *Economics of Education Review*, 26(6), 699–708; Konstantopoulos, S., & Chun, V. (2009). What are the long-term effects of small classes on the achievement gap? Evidence from the lasting benefits study. *American Journal of Education*, 116(1), 125–154; Krueger, A. (1999). Experimental estimates of education production functions. *Quarterly Journal of Economics*, 114(2), 497–532; Dynarski, S., Hyman, J., & Schanzenbach, D. W. (2013). Experimental evidence on the effect of childhood investments on postsecondary attainment and degree completion. *Journal of Policy Analysis and Management*, 32(4), 692–717; Chetty, R., Friedman, J. N., Hilger, N., Saez, E., Schanzenbach, D. W., & Yagan, D. (2010). *How does your kindergarten classroom affect your earnings? Evidence from Project STAR*. (NBER working paper #16381). Cambridge, MA: National Bureau of Economic Research; Lubienski, S. T., Lubienski, C., & Crawford Crane, C. (2008). Achievement differences and school type: The role of school climate, teacher certification, and instruction. *American Journal of Education*, 115, 97–138.

-
- ²⁸ Kim, J. (2007). “The Relative Influence of Research on Class-Size Policy” in Loveless, T., & Hess, F. M. (Eds.). *Brookings Papers on Education Policy: 2006–2007* (pp. 273–295). Washington, DC: Brookings Institution Press; Glass, G. V., & Smith, M. (1979). Meta-analysis of class size and achievement. *Educational Evaluation and Policy Analysis, 1*(1), 2–16.
- ²⁹ Mosteller, F. (1995). The Tennessee study of class size in the early school grades. *The Future of Children, 5*(2), 113–127; Nye, B., Hedges, L. V., & Konstantopoulos, S. (1999). The long-term effects of small classes: A five-year follow-up of the Tennessee class size experiment. *Evaluation and Policy Analysis, 21*(2), 127–142; Kim, J. (2007). “The Relative Influence of Research on Class-Size Policy” in Loveless, T., & Hess, F. M. (Eds.). *Brookings Papers on Education Policy: 2006–2007* (pp. 273–295). Washington, DC: Brookings Institution Press.
- ³⁰ Darling-Hammond, L., & Cook-Harvey, C. M. (2018). *Educating the whole child: Improving school climate to support student success*. Palo Alto, CA: Learning Policy Institute.
- ³¹ Darling-Hammond, L. (2010). *The Flat World and Education: How America’s Commitment to Equity Will Determine Our Future*. New York, NY: Teachers College Press; Darling-Hammond, L., Ross, P., & Milliken, M. (2006/2007). High school size, organization, and content: What matters for student success? *Brookings Papers on Education Policy, 163–204*.
- ³² Baker, B. D. (2017). *How money matters for schools*. Palo Alto, CA: Learning Policy Institute.
- ³³ Meloy, B., & Schachner, A. (2019). *Early childhood essentials: A framework for aligning child skills and educator competencies*. Palo Alto, CA: Learning Policy Institute; Meloy, B., Gardner, M., & Darling-Hammond, L. (2019). *Untangling the evidence on preschool effectiveness: Insights for policymakers*. Palo Alto, CA: Learning Policy Institute; Phillips, D. A., Lipsey, M. W., Dodge, K. A., Haskins, R., Bassok, D., Burchinal, M. R., Duncan, G. J., Dynarski, M., Magnuson, K. A., & Weiland, C. (2017). *Puzzling it out: The current state of scientific knowledge on pre-kindergarten effects. A consensus statement*. Washington, DC: Brookings Institution; McCoy, D., Yoshikawa, H., Ziol-Guest, K. M., Duncan, G. J., Schindler, H. S., Magnuson, K., Yang, R., Koeppe, A., & Shonkoff, J. P. (2017). Impacts of early childhood education on medium- and long-term educational outcomes. *Education Researcher, 46*(8), 474–487; Cannon, J., Kilburn, R., Karoly, L., Mattox, T., Muchow, A., & Buenaventura, M. (2017). *Investing early: Taking stock of outcomes and economic returns from early childhood programs*. Santa Monica, CA: RAND Corporation; Yoshikawa, H., Weiland, C., Brooks-Gunn, J., Burchinal, M. R., Espinosa, L. M., Gormley, W. T., Ludwig, J., Magnuson, K. A., Phillips, D., & Zaslow, M. J. (2013). *Investing in our future: The evidence base on preschool education*. Ann Arbor, MI: Foundation for Child Development.
- ³⁴ Melnick, H., Meloy, B., Gardner, M., Wechsler, M., & Maier, A. (2018). *Building an early learning system that works: Next steps for California*. Palo Alto, CA: Learning Policy Institute; Yoshikawa, H., Weiland, C., Brooks-Gunn, J., Burchinal, M. R., Espinosa, L. M., Gormley, W. T., Ludwig, J., Magnuson, K., Phillips, D., & Zaslow, M. J. (2013). *Investing in our future: The evidence base on preschool education*. Ann Arbor, MI: Foundation for Child Development; Phillips, D. A., Lipsey, M. W., Dodge, K. A., Haskins, R., Bassok, D., Burchinal, M. R., Duncan, G. J., Dynarski, M., Magnuson, K. A., & Weiland, C. (2017). *Puzzling it out: The current state of scientific knowledge on pre-kindergarten effects*. Washington, DC: Brookings Institution.
- ³⁵ Meloy, B., Gardner, M., & Darling-Hammond, L. (2019). *Untangling the evidence on preschool effectiveness: Insights for policymakers*. Palo Alto, CA: Learning Policy Institute; Halle, T., Forry, N., Hair, E., Perper, K., Wandner, L., Wessel, J., & Vick, J. (2009). *Disparities in early learning and development: Lessons from the Early Childhood Longitudinal Study—Birth Cohort (ECLS-B)*. Washington, DC: Child Trends.
- ³⁶ DeCicca, P. (2007). Does full-day kindergarten matter? Evidence from the first two years of schooling. *Economics of Education Review, 26*(1), 67–82; Cryan, J. R., Sheehan, R., Wiechel, J., & Bandy-Hedden, I. G. (1992). Success outcomes of full-day kindergarten: More positive behavior and increased achievement in the years after. *Early Childhood Research Quarterly, 7*(2), 187–203; Lee, V. E., Burkam, D. T., Ready, D. D., Honigman, J., & Meisels, S. J. (2006). Full-day versus half-day kindergarten: In which program do children learn more? *American Journal of Education, 112*(2), 163–208; Schroeder, J. (2007). Full-day kindergarten offsets negative effects of poverty on state tests. *European Early Childhood Education Research Journal, 15*(3), 427–439; Hahn, R. A., Rammohan, V., Truman, B. I., Milstein, B., Johnson, R. L., Muntañer, C., Fullilove, M. T., Chattopadhyay, S. K., Hunt, P. C., & Abraido-Lanza, A. F. (2014). Effects of full-day kindergarten on the long-term health prospects of children in low-income and racial/ethnic-minority populations. *American Journal of Preventive Medicine, 46*(3), 312–323; Walston, J. T., & West, J. (2004). *Full-day and half-day kindergarten in the United States: Findings from*

the Early Childhood Longitudinal Study, kindergarten class of 1998–99. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

- ³⁷ Robin, K. B., Frede, E. C., & Barnett, W. S. (2006). *Is more better? The effects of full-day vs. half-day preschool on early school achievement*. (Working paper). New Brunswick, NJ: National Institute for Early Education Research, Rutgers Graduate School of Education.
- ³⁸ Chang, M. (2012). Academic performance of language-minority students and all-day kindergarten: A longitudinal study. *School Effectiveness and School Improvement*, 23(1), 21–48.
- ³⁹ Child Care Aware of America. (2018). *The U.S. and the high cost of child care: A review of prices and proposed solutions for a broken system*. Arlington, VA: Child Care Aware of America.
- ⁴⁰ Child Care Aware of America. (2018). *The U.S. and the high cost of child care: A review of prices and proposed solutions for a broken system*. Arlington, VA: Child Care Aware of America.
- ⁴¹ Melnick, H., Meloy, B., Gardner, M., Wechsler, M., & Maier, A. (2018). *Building an early learning system that works: Next steps for California*. Palo Alto, CA: Learning Policy Institute.
- ⁴² Meloy, B., Gardner, M., & Darling-Hammond, L. (2019). *Untangling the evidence on preschool effectiveness: Insights for policymakers*. Palo Alto, CA: Learning Policy Institute; Phillips, D. A., Lipsey, M. W., Dodge, K. A., Haskins, R., Bassok, D., Burchinal, M. R., Duncan, G. J., Dynarski, M., Magnuson, K. A., & Weiland, C. (2017). *Puzzling it out: The current state of scientific knowledge on pre-kindergarten effects. A consensus statement*. Washington, DC: Brookings Institution; Duncan, G. J., & Magnuson, K. (2013). Investing in preschool programs. *Journal of Economic Perspectives*, 27(2), 109–132; McCoy, D. C., Yoshikawa, H., Ziol-Guest, K. M., Duncan, G. J., Schindler, H. S., Magnuson, K., Yang, R., Koepf, A., & Shonkoff, J. P. (2017). Impacts of early childhood education on medium- and long-term educational outcomes. *Education Researcher*, 46(8), 474–487; Cannon, J., Kilburn, M. R., Karoly, L., Mattox, T., Muchow, A., & Buenaventura, M. (2017). *Investing early: Taking stock of outcomes and economic returns from early childhood programs*. Santa Monica, CA: RAND Corporation.
- ⁴³ Halle, T., Forry, N., Hair, E., Perper, K., Wandner, L., Wessel, J., & Vick, J. (2009). *Disparities in early learning and development: Lessons from the Early Childhood Longitudinal Study—Birth Cohort (ECLS-B)*. Washington, DC: Child Trends; Magnuson, K. A., Ruhm, C. J., & Waldfogel, J. (2004). Does prekindergarten improve school preparation and performance? *Economics of Education Review*, 26(1), 33–51.
- ⁴⁴ Odom, S. L., Vitztum, J., Wolery, R., Lieber, J., Sandall, S., Hanson, M. J., Beckman, P., Schwartz, I., & Horn, E. (2004). Preschool inclusion in the United States: A review of research from an ecological systems perspective. *Journal of Research in Special Educational Needs*, 4(1), 17–49.
- ⁴⁵ Aikens, N. L., & Barbarin, O. (2008). Socioeconomic differences in reading trajectories: The contribution of family, neighborhood, and school contexts. *Journal of Educational Psychology*, 100(2), 235–251; Howes, C., & Wu, F. (1990). Peer interactions and friendships in an ethnically diverse school setting. *Child Development*, 61(2), 537–41; Reid, J. L., Kagan, S. L., Hilton, M., & Potter, H. (2015). *A better start: Why classroom diversity matters in early education*. Washington, DC: Century Foundation and Poverty & Race Research Action Council; Reid, J. L., & Ready, D. D. (2013). High-quality preschool: The socioeconomic composition of preschool classrooms and children’s learning. *Early Education and Development*, 24(8), 1082–1111.
- ⁴⁶ Fuller, B., Kagan, S. L., Loeb, S., & Chang, Y-W. (2004). Child care quality: Centers and home settings that serve poor families. *Early Childhood Research Quarterly*, 19(4), 505–527; Hatfield, B. E., Lower, J. K., Cassidy, D. J., & Faldowski, R. A. (2015). Inequities in access to quality early care and education: Associations with funding and community context. *Early Childhood Research Quarterly*, 30(Part B), 316–326; LoCasale-Crouch, J., Konold, T., Pianta, R., Howes, C., Burchinal, M., Bryant, D., Clifford, R., Early, D., & Barbarin, O. (2007). Observed classroom quality profiles in state-funded pre-kindergarten programs and associations with teacher, program, and classroom characteristics. *Early Childhood Research Quarterly*, 22(1), 3–17.
- ⁴⁷ Adamu, M., & Hogan, L. (2015). *Point of entry: The preschool-to-prison pipeline*. Washington DC: Center for American Progress. <https://cdn.americanprogress.org/wpcontent/uploads/2015/10/07133457/PointOfEntryreport-SUMMARY.pdf>; Lochner, L., & Moretti, E. (2004). The effect of education on crime: Evidence from prison inmates, arrests, and self-reports. *American Economic Review*, 94(1), 155–189.
- ⁴⁸ American Psychological Association. (2008). *Zero tolerance task force report: An evidentiary review and recommendations*. Washington, DC: Author; Council on School Health. (2013). Out-of-school suspension and

expulsion. *Pediatrics*, *131*, e1000–e1007; Petras, H., Masyn, K. E., Buckley, J. A., Ialongo, N. S., & Kellam, S. (2011). Who is most at risk for school removal? A multilevel discrete-time survival analysis of individual- and context-level influences. *Journal of Educational Psychology*, *103*, 223–237.

⁴⁹ The “school-to-prison pipeline” can be defined as “the school policies and procedures that drive many of our nation’s schoolchildren into a pathway that begins in school and ends in the criminal justice system.” See: Anti-Defamation League. (2015). *What is the school-to-prison pipeline?* New York, NY: Author. <http://www.adl.org/assets/pdf/education-outreach/what-is-the-school-to-prison-pipeline.pdf> (accessed 09/08/18).

⁵⁰ U.S. Department of Education, Office for Civil Rights, Civil Rights Data Collection, 2013–14.

⁵¹ Malik, R. (2017). *New data reveal 250 preschoolers are suspended or expelled every day*. Washington, DC: Center for American Progress.

⁵² Gilliam, W. S. (2008). *Implementing policies to reduce the likelihood of preschool expulsion*. (Policy Brief Series, No. 7). New York, NY: Foundation for Child Development. http://www.ziglercenter.yale.edu/publications/PreKExpulsionBrief2_tcm350-34772_tcm350-284-32.pdf.

⁵³ Saft, E. W., & Pianta, R. C. (2001). Teachers' perceptions of their relationships with students: Effects of child age, gender, and ethnicity of teachers and children. *School Psychology Quarterly*, *16*(2), 125.

⁵⁴ Skiba, R. J., Horner, R. H., Chung, C. G., Rausch, M. K., May, S. L., & Tobin, T. (2011). Race is not neutral: A national investigation of African American and Latino disproportionality in school discipline. *School Psychology Review*, *40*, 85–107.