Center for American Progress

AP PHOTO/ELAINE THOMPSON

Underpaid and Unequal

Racial Wage Disparities in the Early Childhood Workforce

By Rebecca Ullrich, Katie Hamm, and Rachel Herzfeldt-Kamprath August 2016

Center for American Progress

Underpaid and Unequal

Racial Wage Disparities in the Early Childhood Workforce

By Rebecca Ullrich, Katie Hamm, and Rachel Herzfeldt-Kamprath August 2016

Contents

Introduction and summary

More than 3 million children younger than age 6 regularly attend center-based care and education.[1] Formal care arrangements—such as child care centers and preschools[2]—are an increasingly prominent part of children's lives: 65 percent of young children have all available parents in the workforce.[3] Policymakers, recognizing the importance of these early care and education environments—not just as a work support for parents but also as a means to promote children's learning and development—are looking for strategies to boost program quality.

Experts know that effective teachers are central to quality early care and education.[4] It is no surprise, then, that many quality improvement efforts have focused on increasing education requirements for teachers and bolstering access to professional development and training.[5] Children's learning and development is supported by thoughtful instruction and warm, engaging interactions.[6] It takes a skilled and effective workforce to provide the level of instruction necessary to promote positive outcomes—including social skills and early literacy and numeracy skills—but the United States continues to pay most early childhood educators embarrassingly low wages.[7] Preschool teachers and child care workers rank in the bottom 20th percentile for mean annual salaries.[8] Moreover, many teachers lack access to important benefits such as health insurance and paid leave.[9]

New analyses presented in this report suggest that poor compensation and benefits are felt most acutely by African American women in the early childhood workforce. On average, African American female teachers working full time make 84 cents for every $1 earned by their white counterparts.[10] White teachers working full-time make an average of $13.86 per hour: This 16 percent wage gap means an African American teacher would make $366 less per month and $4,395 less per year, on average. When differences in educational backgrounds, years of experience, and employment characteristics are taken into account, the wage gap between African American and white female, full-time teachers is reduced to roughly 93 cents on the dollar. However, this is still a meaningful difference in a workforce that makes less than $30,000 per year, on average.[11]

Addressing compensation for the early childhood workforce as a whole must be a priority for policymakers, as the low wages and lack of benefits available to the workers—predominantly women—who care for and educate our nation's youngest citizens stand in stark contrast to the significance of their work. Early care and education is a necessity in today's society, as families increasingly include dual earners or a single working parent. Efforts to improve the quality of early childhood programs without addressing teachers' low wages and stressful working conditions are unlikely to bring about the long-term benefits and return on investment associated with high-quality programs. Poor teacher compensation is associated with lower job satisfaction and higher turnover rates, which can affect children's learning and development.[12] In the absence of increased wages and benefits, the early childhood field will continue to struggle to recruit and retain highly qualified teachers.[13]

Furthermore, policies that aim to increase compensation must ensure that early care and education programs are not perpetuating the same systemic inequalities among educators that they seek to break down for children. Relative to the broader population, women of color are overrepresented in the early childhood workforce, but racial and ethnic diversity tends to decline as credential requirements increase.[14] This is likely a consequence of the systemic barriers that hamper access to higher education and training for people of color, as well as the more implicit biases that continue to affect wages and upward mobility within a given career field. As the population of children entering early care and education becomes increasingly diverse, maintaining diversity across all roles in the early childhood workforce is especially critical. Research on the K-12 education system shows that teachers of color are linked to improved student outcomes and increased self-esteem for students of color because they serve as models of professional success.[15] Thus, efforts to increase teachers' educational qualifications must recognize and address the barriers to higher education in an already low-wage workforce—particularly among teachers of color.

A comprehensive approach to child care reform is necessary to address chronically low wages and an underfunded child care system that ultimately hurts children, families, and the economy. The Center for American Progress recommends that the United States establish a High-Quality Child Care Tax Credit, which would provide low- and middle-income families with up to $14,000 per year to purchase child care.[16] This approach would establish a well-funded child care system that includes adequate wages and benefits for the early childhood workforce. A large public child care investment will provide resources to improve teacher pay across the board and reduce inequities that leave teachers in some early childhood settings, particularly child care programs, with comparatively lower pay.

Short of comprehensive reform, policymakers should consider other interim strategies toward improving compensation and benefits for all early childhood educators, including: enhancing scholarship programs for teachers seeking degrees; targeting teachers of color; establishing pay parity across early care and education settings, as well as pay equal to that of K-12 educators; and increasing wages for Head Start teachers in the next Head Start reauthorization. Additionally, leaders in the early childhood field must access education and training that facilitate conversations about race and address how to manage implicit biases in the workplace.

An effective, well-paid workforce is central to quality programs

The importance of engaging, supportive learning environments for young children is indisputable. With 65 percent of children ages 5 and younger in families with all available parents in the workforce, early care and education programs are a significant part of many children's lives.[17]

Research has established that program quality is necessary to promote positive outcomes for children and that effective teachers are central to quality.[18] As a result, policymakers are increasingly calling for more stringent educational requirements for lead teachers in early childhood settings. The 2007 Head Start reauthorization required a bachelor's degree for half of all lead teachers in Head Start programs nationwide.[19] As of 2014, 21 states required that any classroom receiving public preschool funds must have a lead teacher with a bachelor's degree.[20] Many states are also increasing their professional development and training requirements for preschool and child care teachers.[21]

Low wages for early educators undermine efforts to improve quality

While expectations for early educators' education and training have never been higher, wages remain low. Poor compensation for early childhood educators is well-documented, but little to no action has been taken over the past quarter-century.[22] Today, the early childhood workforce as a whole ranks in the bottom 20th percentile for mean annual salaries.[23] In addition, many early childhood teachers also report not having access to important employer-provided benefits—such as health insurance—while those that do have access express concern about having their benefits cut.[24]

Low wages are a disservice to teachers and the children that they serve. Supportive teacher-child interactions and language-rich, engaging instruction are the hallmarks of a high-quality classroom.[25] After decades of brain research, we know that a child's experiences during the first few years of life lay the foundation for language, cognitive skills, and socio-emotional functioning.[26] It takes a well-trained and devoted

workforce to create an effective learning environment that builds these skills in a developmentally appropriate manner, but low wages make it difficult to recruit and retain highly qualified teachers.[27] Once in the classroom, the stressors associated with low wages—such as poor mental and physical health—can make it difficult for teachers to focus their energy on the needs and well-being of children in their care.[28]

Lack of funding in early childhood programs affects wages

The current system of center-based early care and education is a melting pot of settings, including child care centers, public and private preschools, school-based programs, and Head Start. While more than 80 percent of child care and preschool programs are private for-profit or nonprofit institutions, many receive some federal, state, and/or local government funding.[29] Across the board, public funds for early childhood programs are limited, often serving just a fraction of eligible children and providing well below the cost of quality programming. Where early childhood teachers work and who they serve can lead to major differences in compensation.

Early childhood educators are woefully underpaid, and many lack access to critical supports to higher education, training, and health care benefits.[30] However, there are deep and persistent inequities across program types and the ages of children being cared for.[31] This is partially a reflection of the great variation in the credentials required to be a teacher in one setting versus another. For instance, an average preschool teacher in Louisiana makes $19.21 per hour and is typically required to have a bachelor's degree, while an average child care worker in the same state may or may not be required to have any postsecondary education and earns only $8.82 per hour.[32]

That being said, education is not necessarily the primary driver of wages—even among teachers who fall under the same umbrella of program funding. In New York City, where the universal prekindergarten program is offered both in public schools and community-based programs, the starting salary for a teacher with a master's degree in a public pre-K classroom is about $5,000 higher than for a teacher with the same credentials in a community-based program. For teachers with a master's degree and 20 years of experience, the gap in salary increases to up to about $40,000 between teachers in schools and those in other settings.[33]

The issue of compensation for the early childhood workforce is one that has received a great deal of attention in the past year from researchers and policymakers alike—but little progress has been made to address the problem through policy.[34] The problems inherent in a system that lacks a coherent career ladder and is inconsistent in credential requirements and compensation across roles are well-documented. It is important to have a baseline understanding of the fractured nature of the existing early care and education system before delving into the purpose of this report, which is to consider compensation issues through the lens of racial inequality.

Historic biases contribute to early educators' low wages

In the early childhood field, researchers and policymakers often talk about the importance of racial equity in the context of children receiving care. However, notably less is said about the teachers who provide it. The low wages available to the early care and education workforce are rooted in an enduring perception of child care as a natural role for women, one that requires little skill and thus is deserving of little to no pay.[35] Years of research on children's learning and development prove that this is not the case: Child development is complex, and being an effective early childhood educator requires considerable skill and ability.[36] Compensation levels, however, are still grounded in antiquated notions of what constitutes—and who performs—skilled labor.

Today, the average wages in female-dominated occupations such as child care are lower, on average, when compared with male-dominated occupations, reflecting persistent biases against what has long been considered "women's work."[37] However, examining the poor compensation available to the early childhood workforce through a colorblind lens ignores the vastly different experiences that women of color have had compared with white women in terms of their experiences in care work.

For centuries, the care and education of young children was less a robust occupation—one with livable wages, benefits, and worker protections—than it was a domestic responsibility. While more affluent families typically relied on domestic laborers throughout history, it was not until white middle-class mothers entered the labor force en masse—most notably during World War II and subsequently in the 1960s and 1970s—that demand for formal, center-based child care arrangements began to increase. [38]

Low-income women and women of color were working long before white, more affluent women, but institutionalized racism and labor market segregation overtly cut African American and Hispanic women off from most sectors of the workforce.[39] Many women of color were literally or effectively coerced into domestic labor, performing the cooking, cleaning, and childrearing in the homes of more affluent white women for little to no compensation.[40] Ultimately, it was this caregiving performed by women of color that enabled the mass entrance of white middle-class mothers into the professional workforce.[41]

Importantly, the forces that perpetuate segregation in today's labor force are less formal but no less pervasive than they were historically. Women of color left domestic work in droves as new occupations were made available to them in the 1970s.[42] However, African American and Hispanic women are still less likely to have a bachelor's or graduate degree compared with white women, which restricts their access to occupations with the highest pay and the most comprehensive benefits.[43]

These disparities are echoed in the early childhood workforce itself. The pervasive structural barriers that have prevented people of color from accessing higher education have hindered African American and Hispanic women from professionalizing at the same pace as the broader early childhood workforce. Teachers of color are underrepresented in the environments that require the highest credentials and compensation—namely, state-funded pre-K and other preschool programs—and are particularly overrepresented as home-based caregivers.[44] Disparities in access to higher education and training are most certainly a contributor to this trend. Like in other industries, however, educational attainment does not tell the whole story,[45] and there are likely other forces—such as implicit biases against women of color—at work.

Diversity in the broader early childhood workforce today

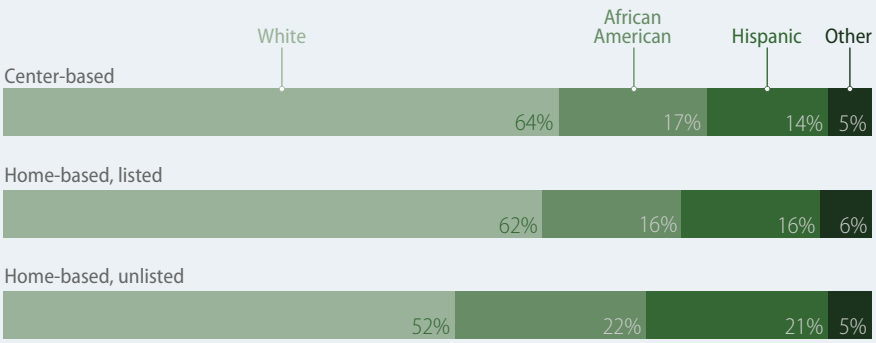
The National Survey of Early Care and Education, or NSECE, provides nationally representative data on the roughly 2 million teachers in center- and home-based early care and education programs in the United States.[46] Center-based providers include private for-profit or nonprofit programs, Head Start centers, private programs receiving state pre-K funding, and state pre-K classrooms located in public schools. Home-based providers are individuals who regularly provide care for children in a home-based setting. Home-based providers include listed, regulated family child care providers and unlisted, unregulated family, friend, and neighbor caregivers or nannies and au pairs.

Compared with the broader labor force—as well as with K-12 teachers—women of color are overrepresented in the early childhood workforce, particularly in unlisted home-based care.[47] (see Figure 1)

FIGURE 1

The early childhood workforce is relatively diverse

Racial and ethnic diversity in the center- and home-based workforces, 2012



Note: Data for the home-based workforce include providers who serve school-age children.

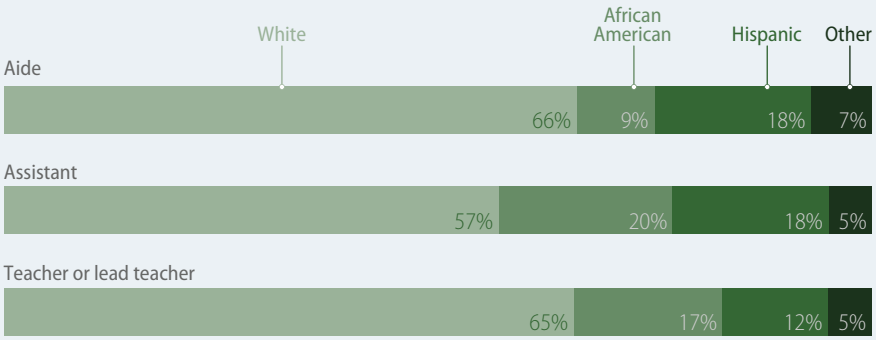
Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

In center-based settings, diversity also varies as a function of educators' roles. Diversity is greater among workers in the NSECE who identify as assistant teachers compared with those who identify as teachers or lead teachers. (see Figure 2)

FIGURE 2

Diversity in the early childhood workforce varies by educator role

Share of aides, assistants, and teachers or lead teachers, by race and ethnicity, 2012



Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

The early care and education system lacks a consistent career ladder across program settings. Within a given center, however, credential requirements are generally highest for teachers and lead teachers compared with aides or assistants. Previous research confirms the general trend that diversity declines as educational requirements increase.[48] Among supervisory roles—such as center directors and program administrators—the proportion of people of color is even lower.[49]

Racial wage gaps in the early childhood workforce

Largely missing from recent policy discussions is the role that race plays in teacher compensation. Given that the early childhood workforce is disproportionately comprised of women of color, a better understanding of how wages vary by race and ethnicity can inform efforts to improve compensation across the board. In addition, a racial lens is necessary in order to ensure that the early childhood workforce maintains its diversity while policymakers and advocates work to expand access to high-quality early learning opportunities.

Today, African American early childhood educators earn lower wages than their white counterparts. A new national survey of the early childhood workforce—conducted by the U.S. Department of Health and Human Services—provides an opportunity to understand how trends in compensation and benefits relate to race and ethnicity at the national level.[50]

Our report focuses on full-time teachers in the National Survey of Early Care and Education's 2012 Workforce Quick Tabulation File.[51] The analysis sample is nationally representative of roughly 500,000 center-based female teachers and lead teachers who work full time with children from birth to age 5. For the purposes of the analyses described in this report, males—who comprise less than 5 percent of the early childhood workforce[52]—were excluded. The sample was further limited to include only teachers and lead teachers, who are typically those responsible for overseeing the day-to-day management of a particular classroom, including planning lessons and activities. This role is found in every early childhood classroom, while the presence and duties of support staff, such as aides and assistants, vary across programs. Additionally, the majority of recent policies related to increased credentials for early educators are focused on lead teachers. (For a full description of the sample and methodology, see Appendix A) Full-time teachers and lead teachers comprise 51 percent of the overall sample in the Workforce Quick Tabulation File. Seventy-six percent of all teachers and lead teachers in the sample are full time, while less than one-quarter work part time.

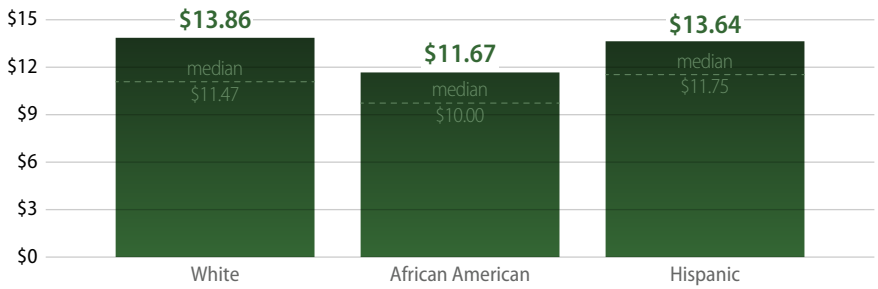
Each analysis presented in this report for full-time teachers also was conducted for the full sample and for part-time teachers. The results can be found in Appendices A and B.

African American full-time teachers make 84 cents for every $1 earned by white full-time teachers. (see Figure 3) In other words, if a white teacher earns $13.86 per hour, on average, an African American teacher working full time would earn $366 less per month and $4,395 less per year, on average.[53] Hispanic teachers' average pay is more in line with that of white teachers—though 2 percent lower—at 98 cents on the dollar.

FIGURE 3

African American teachers earn 84 cents for every dollar white teachers earn

Average hourly wages for full-time teachers, by race and ethnicity, 2012

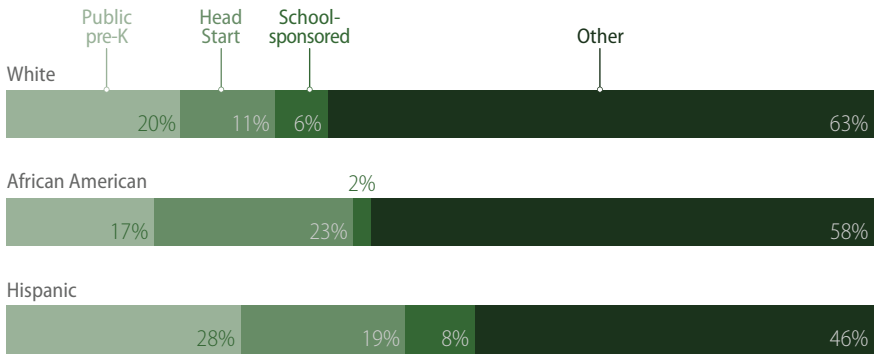


Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

FIGURE 4

Teachers of color are more likely to work in Head Start centers than their white peers

Share of teachers working in different types of centers, by race and ethnicity, 2012



Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

Some of the racial wage gap reflects differences in education level and place of employment. Factors related to higher pay include working in a school-sponsored center; having a bachelor's degree; holding a state early childhood certification or Child Development Associate Credential; having three or more years of experience; and working in a classroom serving preschool-age children.[54] (see Appendix A)

Institutional racism affects many of the factors that contribute to the wage gap, such as access to higher education and where a teacher works. In general, African American teachers are less likely to have the educational background and employment characteristics associated with higher wages. For instance, white and Hispanic teachers are almost twice as likely to have a bachelor's degree compared with African American teachers. African American teachers are also the least likely to work for a school-sponsored center, where average hourly wages are highest. (see Figure 4)

Even after taking these factors into consideration, significant wage gaps remain. (For regression tables, see Appendix B) Results of the multiple regression analysis reveal that African American teachers who work full time experience a 6.7 percent wage gap compared with white teachers, which translates to 93 cents on the dollar. When considered on an hourly basis, a few pennies may seem insignificant, but they add up over time, particularly in an already low-wage workforce. If a white teacher earns $13.86 per hour, a 93 cent hourly wage gap equates to African American teachers earning $163 less per month and $1,955 less per year.[55]

Among teachers with a bachelor's degree, there is no measureable racial wage gap. In an analysis of lead teachers with bachelor's degrees only, race was not a significant predictor of wages when other credentials and employment characteristics were taken into account. (see Appendix B) However, a bachelor's degree itself is not a silver bullet, as persistent disparities in wages exist across provider settings.[56] Full-time lead teachers with a bachelor's degree in school-sponsored programs make, on average, $4 to $5 more per hour than a teacher in the same position with the same education in other publicly funded programs, regardless of ethnicity.[57]

Results of regression analyses suggest that characteristics such as education, credentials, and program type are individually associated with higher wages. That being said, it is important to note that teachers' credentials and the settings in which they work go hand in hand. For example, school-sponsored centers typically serve preschool-age children and require teachers to have a bachelor's degree or higher. (see Appendix C) The analyses presented in this report reveal that African American teachers are disproportionately underrepresented across almost all of these factors, which likely exacerbates the racial wage gap and also points to the larger opportunity gap that is well-documented for people of color.

Program types in the NSECE

School-sponsored centers: A public school district oversees or funds the program. Head Start and public pre-K programs are included in this category if a public school district is the grantee or program administrator.

Head Start: At least one child attending the center is funded by Head Start, but the center is not school sponsored.

Public pre-K: At least one child attending the center is funded by public pre-K program dollars, but the center is not school sponsored and did not report receiving Head Start funding.

Other centers: All other programs that offer early care and education.

Source: NSECE Project Team, "Codebook for Center-based Provider Quick Tabulation File" (2012), p. 133, available at **http://www.researchconnections.org/childcare/studies/35519**.

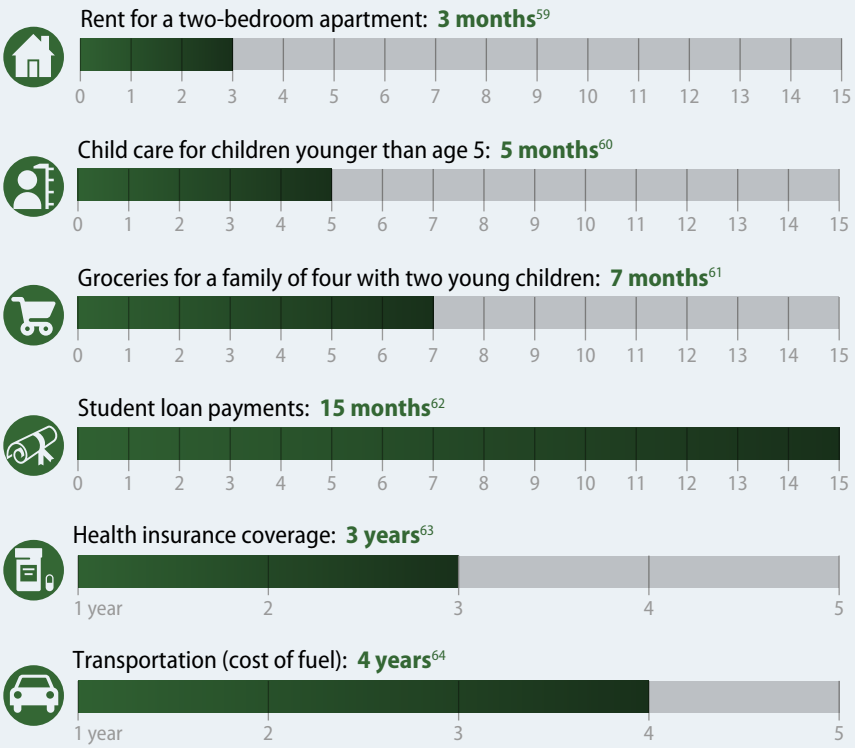
Even more importantly, results determine that teachers' credentials and employment settings do not fully account for the differences in wages between African American and white teachers. That there is an unexplained portion of the wage gap suggests that there may be unobservable, implicit biases against women of color at play.

Ultimately, policies aimed at addressing compensation for early educators—both in terms of increasing wages across the board and in closing racial wage gaps—must be strategic and multidimensional. First, policies should be rooted in developmental science, acknowledging and rewarding the skills and competencies required to nurture the learning and development of young children. Second, policies must recognize and address the significant structural and implicit barriers that low-wage workers and people of color face in pursuit of education, training, and career advancement.

How wage gaps hurt women of color in child care

Over time, making 84 cents on the dollar significantly adds up. The $366 less per month and $4,395 less per year that African American full-time teachers make compared with white teachers is enough to cover the cost of regular household necessities—such as groceries or utilities—or professional development necessary for career advancement over the course of several months or even years:[58]

Household expenses:



Professional development or continuing education costs:

A full year of course work at a community college: **$3,435**[65]

PLUS

Cost of a Child Development Associate Credential application: **$425**[66]

PLUS

Participation in the National Association for the Education of Young Children's Professional Learning Institute: about **$400**[67]

Note: Calculations are based off of African American teachers' yearly loss.

Disparities in access to workforce supports

Disparities in pay are further exacerbated by unequal access to important workforce supports. Employer-sponsored benefits and support for professional development and training are part of a broader set of supports that can bolster teachers' effectiveness. While the body of research on the workforce supports available to early educators is relatively sparse, available data suggest that access to employer-sponsored benefits is fairly uncommon.[68] The lack of important benefits—such as employer-sponsored health insurance—may compound with the stressors of low wages to create an unstable workforce.[69] Likewise, professional development and training are increasingly becoming a requirement for early childhood educators, but the financial burden of participation costs is often passed on to educators, who are already struggling to make ends meet.[70] Among lead teachers, access to employer-sponsored benefits and professional development opportunities varies by race.

Access to health insurance

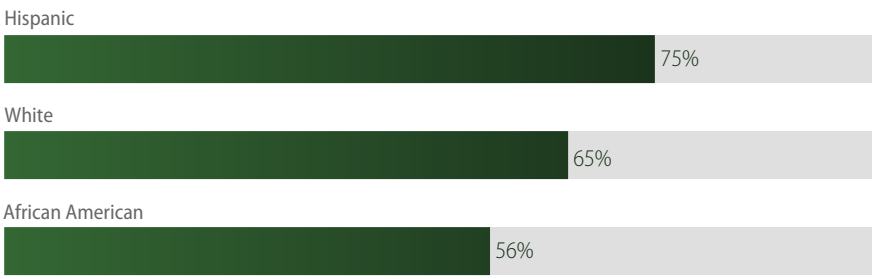
The National Survey of Early Care and Education asked center-based providers to report whether they offer health insurance, and teachers reported whether or not they accessed benefits.[71] Compared with white and Hispanic teachers, African American teachers are less likely to work for a center that offers health insurance. (see Figure 5)

Consequently, African American full-time teachers are also the most likely to report having no health insurance coverage. Compared with their white counterparts, African American teachers working full time are equally likely to have an insurance plan from their employer but more than three times less likely to have insurance coverage from a spouse or partner's employer. Hispanic teachers working full time are most likely to use a health insurance plan through their employer. (see Figure 6)

FIGURE 5

Most center administrators indicate that health insurance is available to employees

Share of teachers employed in a center that offers health insurance, by race and ethnicity, 2012

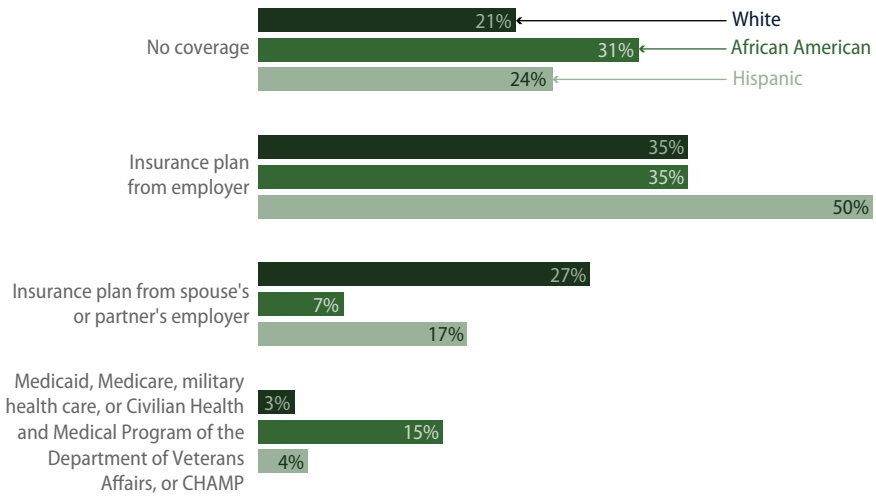


Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

FIGURE 6

African American teachers are most likely to lack insurance coverage

Share of selected health insurance coverage types, by teachers' race and ethnicity, 2012



Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

The large discrepancies between availability of and access to employee health insurance—both within and across racial and ethnic groups—suggest that benefits are practically inaccessible to teachers, even if they are theoretically available. Teachers' overall health and well-being is associated with their effectiveness in the classroom. Thus, efforts to improve quality by providing higher wages must be coupled with workforce supports such as health insurance, and these benefits must be affordable for teachers.[72]

Support for professional development and training

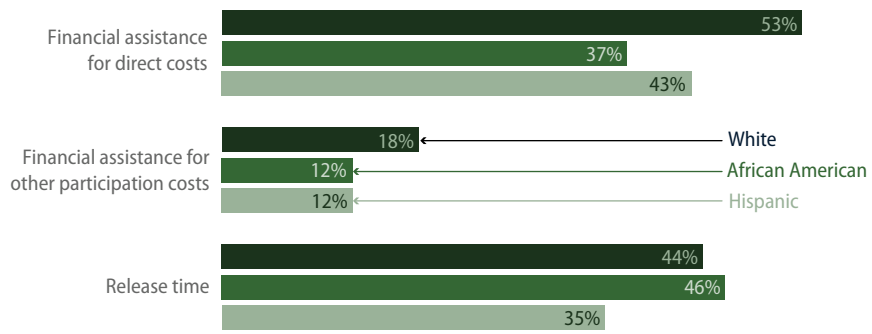
Access to and financial assistance for professional development are important to promote an effective workforce. Roughly 94 percent of teachers reported participating in at least one form of professional development or training in the past year, ranging from workshops to college courses.[73]

All full-time teachers are employed at centers where directors report professional development assistance being available at relatively equal rates. However, actual access to these supports varies by race. (see Figure 7) For instance, while 53 percent of white teachers who participated in professional development reported that they received aid to cover the direct costs, just 43 percent of Hispanic teachers and 37 percent of African American teachers reported the same. Conversely, African American teachers were the most likely to utilize release time—or approved time off to participate in professional development—which could be paid or unpaid.[74]

FIGURE 7

African American teachers are less likely to access financial support for education and training

Share of teachers who reported access to professional development assistance, by race and ethnicity, 2012



Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

Given the focus on professionalization in the early care and education workforce, it is critical that teachers receive basic supports in order to access continuing education and training. Paid time off to participate in professional development is a necessity, but it is not enough. It is unrealistic to expect members of a low-wage workforce to shoulder the burden of participation costs for trainings, which are becoming increasingly mandatory for early childhood educators.

Teachers of different racial and ethnic backgrounds are equally likely to attend various forms of professional development, and they are also equally likely to work for centers whose directors offer support for training participation.[75] However, African American teachers are significantly less likely to indicate that they received financial assistance for direct costs associated with professional development or continuing education. The data do not allow for further analyses into why African American teachers might not access supports when they are theoretically available. If education and training are gateways to higher wages, disparate access to financial supports will serve to perpetuate inequities in pay.

Increasing quality by increasing compensation—for all teachers

In early care and education, program quality and teacher compensation are two sides of the same coin. Improving wages is essential to developing a highly qualified workforce, which serves as the foundation of a high-quality early childhood program. At the same time, center costs are driven largely by staff costs.[76] Parents are already shouldering the high cost of early care and education, spending $18,000 annually, on average, for an infant and a preschooler in a center.[77] Increasing compensation requires another source of revenue to ensure that care is affordable for parents and that providers receive adequate compensation. Thus, the United States needs a major federal investment in early care and education coupled with state initiatives that support high-quality programs.

Last year, CAP proposed a major federal investment through a new High-Quality Child Care Tax Credit that would provide low-income and middle-class families with up to $14,000 to purchase child care.[78] In the current child care system, low wages are largely a reflection of an underresourced, bifurcated system. Teachers who are least able to access resources, such as education, and vulnerable to discrimination by virtue of their race or ethnicity are least likely to find the rare positions that pay adequately. With the High-Quality Child Care Tax Credit, public funding can provide resources that adequately fund a child care system, thus increasing wages across the board and reducing inequities. This approach would create a well-funded child care system that would boost wages for the early childhood workforce to an average of $16 per hour and provide benefits. Some states have increased the minimum wage to $15 per hour for all workers,[79] which helps child care workers—particularly women of color—who earn well below this floor.

Additionally, we must consider ways to improve professional development, education, and training for center directors with a focus on equity for staff. The early care and education field lifts up diversity and cultural competence as key to ensuring the success of our youngest learners.[80] Less discussed is the importance of diverse and culturally competent leadership at the helm of these programs to promote the success and well-being of staff. As the population of children continues to grow more

diverse, maintaining and increasing diversity in the early childhood workforce will be a priority, and center directors and program administrators will be key players in this effort. It is critical that early childhood leadership has access to professional development, preparation, and training that facilitate difficult conversations about race and culture and provide tools to manage implicit biases in the workplace.

As policymakers continue to expand early care and education programs, demand for highly skilled teachers will rise, and it is critical that we ensure that compensation and benefits increase in kind. Even more importantly, we must ensure that implementing structural indicators of quality—such as teachers' education levels and participation in professional development—does not serve to reinforce the systemic structural barriers for people of color that early care and education purports to break down.

Short of comprehensive reform, there are several interim steps that policymakers can take to improve compensation and benefits:

- **Enhance scholarships and supports to teachers seeking degrees.** Among teachers with a bachelor's degree, there are no measureable differences in wages by race or ethnicity.[81] While increasing credentials is an important step toward professionalization, the financial burden of continuing education strains an already low-paid workforce. Implementing degree requirements also brings to light the structural barriers that have prevented people of color from accessing—and successfully completing—higher education in general.[82] Analyses demonstrate that as compensation and credentials increase, the proportion of teachers of color tends to decline.[83] To maintain diversity, degree requirements should be coupled with scholarship programs and other education supports targeted to women of color, who are more likely to perceive the cost of higher education as a significant barrier to becoming an early childhood educator.[84]

- **Create wage parity.** A significant pay gap exists not only between early childhood and K-12 teachers but also across early care and education settings.[85] Consequently, teachers with a bachelor's degree and the same amount of experience can earn vastly different wages depending on whether they teach in a kindergarten classroom, a school-sponsored center, or an independently operated program. The opportunity to earn a living wage should not only be available to those who work in particular settings when the job function remains the same. Creating wage parity, based on teachers' education levels and/or commensurate experience, is necessary to promote diversity and reduce wage gaps across all settings and age groups.

- **Increase wages in the next Head Start reauthorization.** Head Start was designed to reduce disparities in low-income communities prior to school entry and has long been recognized as a leader in high-quality early care and education.[86] Teachers of color make up almost half of all lead teachers in Head Start classrooms, reflecting the diversity of the communities they serve.[87] Low wages in Head Start settings in relation to school-sponsored programs are in direct conflict with the program's goals. In the next Head Start reauthorization, Congress should fund higher wages to support the workforce.

Conclusion

The early childhood field is at a pivotal moment as momentum for national change builds. Public demand for access to high-quality programs is high, and politicians on both sides of the aisle are increasingly supportive of expanding public programs.[88] Consequently, the landscape of child care and preschool is changing rapidly. Policymakers and program administrators are responding appropriately to our expanding knowledge base of child development, recognizing early care and education settings as critical learning environments for young children above and beyond their function as a work support for parents. At the federal level, Congress created Preschool Development Grants to help states expand preschool with bipartisan support.[89] Likewise, many states and cities are ramping up their preschool programs. The creation and expansion of Early Head Start-Child Care Partnerships is also illustrative of this paradigm shift: Working families need access to care that is full day, full year, as well as high quality and comprehensive.[90]

While the field is moving in the right direction in many ways, not enough attention has been paid to ensuring that funding supports a highly qualified workforce. The widening gap between expectations for teachers and the compensation and workforce supports available to them is stark. Efforts to improve the quality of early care and education programs without addressing wages will only perpetuate the status quo.

Moreover, the demographic makeup of young children in the United States is shifting: Children younger than age 6 are more diverse than ever.[91] Currently, the demographics of the early care and education workforce roughly correlate to those of the children in their care.[92] However, as the population of young children continues to diversify, policymakers must make it a priority to increase the racial, ethnic, and linguistic diversity in the workforce. Research suggests that a diverse workforce is critical to ensure that children of color have role models and to promote high expectations. In order to achieve this goal, barriers to higher education and training must be broken down, and implicit biases must be addressed.

As policymakers consider strategies to increase compensation across the board, they also must consider the historic roots in low wages for early childhood educators—and for teachers of color in particular. The findings presented in this report may not be surprising in light of what is known about racial and ethnic pay disparities in the broader workforce, but it is important that they are discussed and addressed in the specific context of the field of early care and education.[93] Experts tend to think of early education as an equalizer of sorts, in that participation in high-quality preschool and child care programs supports all children to start their K-12 education with the skills they need to succeed—and ultimately become more productive citizens.[94] This goal is overtly undermined if programs perpetuate inequality among the adults who care for and educate young children.

About the authors

Rebecca Ullrich is a Policy Analyst with the Early Childhood Policy team at the Center for American Progress, where she focuses on the early childhood workforce and quality improvement systems in early care and education. Previously, Ullrich conducted academic research related to observations of classroom quality and teacher-child interactions as a graduate research assistant at George Mason University. She also provided research assistance on evaluations of federal programs related to higher education; adult basic education; housing; and science, technology, engineering, and math education with Abt Associates in Bethesda, Maryland.

Katie Hamm is the Senior Director of Early Childhood Policy at the Center. Prior to joining the Center, Hamm worked as a program examiner at the U.S. Office of Management and Budget on federal child care and early education programs, including the Race to the Top-Early Learning Challenge, the Child Care and Development Fund, and the Head Start program. Her work focused on developing budget proposals to strengthen the quality of and access to early childhood programs. She also worked on international issues in early childhood while on detail to the Organisation for Economic Co-operation and Development. Earlier in her career, Hamm worked at the Center for Law and Social Policy and the Institute for Women's Policy Research on child care and early education issues.

Rachel Herzfeldt-Kamprath is a Policy Analyst with the Early Childhood Policy team at the Center, where her research and analysis contributes to policy development that supports the healthy development of young children. Previously, she worked on state-level policy research, advocacy, and community organizing in Minnesota, where her work ranged from issues related to child care and early education funding to abuse and neglect, human trafficking, and poverty and affordable housing.

Acknowledgments

The authors would like to extend their gratitude to CAP's Rachel West for her review of the data and methodology used in this report. In addition, the authors wish to thank CAP's Jocelyn Frye, Sarah Jane Glynn, Danyelle Solomon, and Karla Walter for their helpful input. Finally, the authors would like to recognize Lauren Hogan, senior director of public policy and advocacy at the National Association for the Education of Young Children, as well as Marcy Whitebook and Lea J.E. Austin, director and specialist, respectively, at the Center for the Study of Child Care Employment, for their insight.

Appendix A: Description of data and descriptive analysis methodology

National Survey of Early Care and Education: Data and sample

The analyses presented in this report utilize data from the National Survey of Early Care and Education to take a more nuanced look at wages in the early childhood workforce. The NSECE survey—sponsored by the Office of Planning, Research & Evaluation, or OPRE, of the Administration for Children and Families at the U.S. Department of Health and Human Services—was intended to provide a national snapshot of the availability and utilization of nonparental child care and early childhood education. Point-in-time data were collected in 2012 through four surveys targeting different populations: households with children younger than age 13; home-based child care providers; center-based child care program administrators; and the center-based child care workforce.[95]

NSECE researchers compiled and geocoded all available state- and national-level administrative lists of early care and education programs to create a nationally representative sample of center-based providers. Providers within particular geographic locations selected by the project team were identified to be surveyed. The NSECE sampling procedure oversampled low-income communities—defined as those in which 40 percent or more of households have incomes below 250 percent of the federal poverty guidelines—because access to early care and education among low-income families is of particular policy relevance.[96]

The sample for the center-based workforce includes one classroom-based worker—a lead teacher or instructor, assistant, or aide—from each participating center-based provider. Workers were randomly selected from the list of classroom instructional staff identified during the center-based provider interview. For detailed information on the sampling methodology, please see the NSECE Summary Data Collection and Sampling Methodology report.[97]

In 2015, OPRE made data publicly available in two forms: public use data files, which contain all variables and observations collected, and quick tabulation data files, which contain select subsets of variables of interest, as well as several supplementary variables from external sources. For the purposes of the analyses in this report, the authors created a data file using the Center-based Workforce Quick Tabulation File, the Center-based Provider Quick Tabulation File, and key variables merged from the corresponding public use data files.[98]

Both the public use and quick tabulation data sets contain data at the individual worker or center level. However, the Center-based Workforce Quick Tabulation files have been condensed to only include workers who primarily work with children ages 0 to 5 who are not yet in school.[99] The quick tabulation files contain several categorical variables that NSECE researchers created, three of which were critical to the analysis in this report: 1) an indicator of whether a classroom served infants and toddlers or preschoolers—children ages 3 to 5, not yet in kindergarten; 2) an indicator of center sponsorship; and 3) an indicator of whether a teacher was employed on a full- or part-time basis. For detailed information on how these variables were created, see the NSECE Center-based Provider Codebook and the Workforce Quick Tabulation Codebook.[100]

Additionally, the public use and quick tabulation data sets both include constructed hourly wage variables for the center-based workforce. NSECE researchers imputed hourly wage values for roughly 5 percent of the full sample. For detailed information on the imputation process, see the NSECE Workforce Quick Tabulation Codebook.[101]

Each data set includes a sampling weight which, when applied, creates a nationally representative sample. The Center-based Provider Quick Tabulation files data come from 8,265 center-based provider questionnaire interviews.[102] The Workforce Quick Tabulation files include a sample of 5,556 teachers, assistants, and aids from the center-based provider questionnaire data. This sample is nationally representative of workers who work with children birth to age 5, not yet in school.[103]

Analysis sample and methodology

For the purposes of this report, the authors further refined the sample. Because the workforce in general—and thus the NSECE sample—is overwhelmingly comprised of women, 181 participants who identified as male or who did not identify their gender were excluded from the analyses. Twenty respondents were also excluded from the analyses who did not identify their race or ethnicity. Finally, the sample was further limited to include only center-based workers who identified themselves as a teacher or lead teacher, excluding an additional 1,550 workers who identified as aides or assistants.

The analyses presented consider four mutually exclusive racial and ethnic categories: non-Hispanic white; African American; Hispanic; and "other," which includes respondents who identified as Asian, Native Hawaiian or Other Pacific Islander, American Indian or Alaskan Native, other, or non-Hispanic multiracial. Respondents in the "other" category comprise only 2 percent of all female lead teachers. For this reason, our analyses do not draw any conclusions about this population, nor should they be used to do so.

The final sample included 3,058 workforce members, which, when weighted, represents 643,983 workers nationally. The analyses presented in this report provide both a descriptive overview of the center-based early childhood workforce and the results of a multiple regression analysis of hourly wages. Results are presented separately for full-time and part-time teachers for several reasons. Importantly, one might expect the characteristics of full- and part-time workers—including their average and median hourly pay—to differ substantively—and indeed, the data utilized in this analysis suggest that is the case. Additionally, wage gaps are typically calculated based on full-time workers' earnings.[104] Part-time workers—defined as those working less than 35 hours per week—constitute one-quarter of the refined sample. The results of the regression analysis for part-time teachers are discussed in Appendix B.

The full-time subgroup included 2,365 lead teachers, weighted to represent 494,997 teachers nationally. The part-time subgroup included 693 lead teachers, weighted to represent 148,986 teachers nationally.

Forty-two respondents were identified as being outliers on the hourly wage variable.[105] Outlying hourly wage data were coded as "missing." Including outliers, 324 respondents—roughly 10 percent of the sample—had missing data for the hourly wage variable and were not counted in the regression analyses. The sample size for each model is included in the regression tables below.

The authors began with an examination of the mean and median wages of full- and part-time lead teachers across an array of demographic characteristics, including race, center sponsorship, employment, and region, among others. Tables 1a through 1h below present a full description of the sample, including racial and ethnic breakdowns for each variable of interest for full- and part-time workers. Tables 2a through 2d depict mean and median wages for each variable of interest for full- and part-time workers. Finally, Tables 3a and 3b present availability of and access to workforce supports for full-time teachers only, by teachers' race and ethnicity.

TABLE 1A

Sample descriptives: Census region of center

Share of teachers, by race and ethnicity

		Northeast	Midwest	South	West
All teachers	White *weighted n = 418,373*	18.1%	24.2%	41.8%	15.9%
	African American *weighted n = 112,303*	6.1%	17.2%	71.6%	5.2%
	Hispanic *weighted n = 79,807*	6.4%	8.3%	56.7%	28.6%
	Other *weighted n = 32,183*	9.2%	18.9%	33.8%	38.1%
	All *weighted n = 624, 666*	14.1%	20.7%	48.4%	16.7%
Full-time teachers	White *weighted n = 302,338*	16.6%	23.6%	43.6%	16.1%
	African American *weighted n = 97,657*	5.2%	17.1%	73.1%	4.5%
	Hispanic *weighted n = 70,162*	7.0%	7.9%	59.1%	26.1%
	Other *weighted n = 24,073*	5.2%	16.7%	34.9%	43.3%
	All *weighted n = 494,229*	12.4%	19.8%	51.2%	16.6%
Part-time teachers	White *weighted n = 116,035*	22.0%	25.8%	36.9%	15.3%
	African American *weighted n = 14,646*	12.2%	17.6%	61.0%	9.2%
	Hispanic *weighted n = 9,646*	2.1%	11.3%	39.5%	47.1%
	Other *weighted n = 8,110*	20.9%	25.6%	30.7%	22.8%
	All *weighted n = 148,437*	19.7%	24.0%	39.1%	17.2%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, National Survey of Early Care and Education (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 1B

Sample descriptives: Community characteristics of center

Share of teachers, by race and ethnicity

		Urbanicity			Poverty density		
		High-density urban	Moderate-density urban	Rural	Low	Moderate	High
All teachers	White *weighted n = 418,373*	58.1%	26.4%	15.5%	67.1%	19.4%	13.5%
	African American *weighted n = 112,303*	74.6%	20.1%	5.3%	36.5%	24.7%	38.9%
	Hispanic *weighted n = 79,807*	82.4%	14.1%	3.5%	41.0%	24.5%	34.5%
	Other *weighted n = 32,183*	91.7%	5.4%	2.9%	47.1%	32.8%	20.1%
	All *weighted n = 624, 666*	65.7%	22.7%	11.6%	57.5%	21.6%	20.8%
Full-time teachers	White *weighted n = 302,338*	58.9%	25.9%	15.2%	64.9%	20.7%	14.4%
	African American *weighted n = 97,657*	74.0%	19.9%	6.1%	37.3%	23.2%	39.4%
	Hispanic *weighted n = 70,162*	80.8%	15.3%	4.0%	39.4%	24.8%	35.8%
	Other *weighted n = 24,073*	92.7%	3.4%	3.9%	37.0%	36.6%	26.4%
	All *weighted n = 494,229*	66.6%	22.1%	11.3%	54.5%	22.6%	23.0%
Part-time teachers	White *weighted n = 116,035*	56.0%	27.9%	16.1%	73.0%	16.0%	11.0%
	African American *weighted n = 14,646*	78.7%	21.3%	0.0%	30.9%	34.0%	35.0%
	Hispanic *weighted n = 9,646*	94.5%	5.5%	0.0%	53.0%	22.4%	24.6%
	Other *weighted n = 8,110*	88.8%	11.2%	0.0%	77.1%	21.4%	1.5%
	All *weighted n = 148,437*	62.6%	24.9%	12.6%	67.8%	18.5%	13.7%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 1C

Sample descriptives: Highest level of education

Share of teachers, by race and ethnicity

		Bachelor's degree or higher	Associate's degree or some college	High school or less
All teachers	White *weighted n = 417,320*	45.4%	39.5%	15.1%
	African American *weighted n = 112,263*	23.9%	54.3%	21.9%
	Hispanic *weighted n = 79,760*	41.9%	40.6%	17.5%
	Other *weighted n = 32,183*	48.8%	44.3%	6.9%
	All *weighted n = 641,526*	41.3%	42.5%	16.2%
Full-time teachers	White *weighted n = 302,338*	44.5%	42.1%	13.4%
	African American *weighted n = 97,617*	23.8%	54.9%	21.3%
	Hispanic *weighted n = 70,162*	43.5%	39.8%	16.7%
	Other *weighted n = 24,073*	39.7%	53.2%	7.1%
	All weighted n = 494,141	40.1%	44.8%	15.1%
Part-time teachers	White *weighted n = 114,983*	47.5%	32.7%	19.7%
	African American *weighted n = 14,646*	24.2%	50.0%	25.8%
	Hispanic *weighted n = 9,646*	30.1%	46.7%	23.3%
	Other *weighted n = 8,110*	75.7%	18.0%	6.4%
	All *weighted n = 147,385*	45.6%	34.5%	19.8%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, National Survey of Early Care and Education (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 1D

Sample characteristics: Degree type

Share of teachers, by race and ethnicity

		Early childhood education or related degree	No degree or not related
All teachers	White *weighted n = 412,201*	66.9%	33.1%
	African American *weighted n = 112,263*	59.0%	41.0%
	Hispanic *weighted n = 79,405*	63.2%	36.8%
	Other *weighted n = 32,030*	60.7%	39.3%
	All *weighted n = 634,888*	64.7%	35.3%
Full-time teachers	White *weighted n = 298,438*	70.9%	29.1%
	African American *weighted n = 96,681*	61.5%	38.5%
	Hispanic *weighted n = 69,916*	65.2%	34.8%
	Other *weighted n = 23,929*	55.5%	44.5%
	All *weighted n = 488,965*	67.5%	32.5%
Part-time teachers	White *weighted n = 113,763*	56.2%	43.8%
	African American *weighted n = 14,571*	42.9%	57.1%
	Hispanic *weighted n = 9,489*	47.9%	52.1%
	Other *weighted n = 8,101*	75.9%	24.1%
	All *weighted n = 145,924*	55.4%	44.6%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, National Survey of Early Care and Education (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 1E

Sample characteristics: Certification status

Share of teachers, by race and ethnicity

		Child development associate credential and/or state-certified	Not certified
All teachers	White *weighted n = 399,686*	53.4%	46.6%
	African American *weighted n = 109,232*	56.6%	43.4%
	Hispanic *weighted n = 75,668*	61.6%	38.4%
	Other *weighted n = 28,798*	49.8%	50.2%
	All *weighted n = 613,383*	54.8%	45.2%
Full-time teachers	White *weighted n = 290,612*	56.3%	43.7%
	African American *weighted n = 95,147*	60.1%	39.9%
	Hispanic *weighted n = 67,076*	59.1%	40.9%
	Other *weighted n = 22,480*	50.3%	49.7%
	All *weighted n = 475,613*	57.2%	42.8%
Part-time teachers	White *weighted n = 109,073*	45.7%	54.3%
	African American *weighted n = 14,084*	33.3%	66.7%
	Hispanic *weighted n = 8,592*	80.9%	19.1%
	Other *weighted n = 6,318*	48.2%	51.8%
	All *weighted n = 138,068*	46.8%	53.2%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, National Survey of Early Care and Education (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 1F

Sample characteristics: Years of experience

Share of teachers, by race and ethnicity

		3 years or more	Less than 3 years
All teachers	White *weighted n = 418,373*	94.4%	5.6%
	African American *weighted n = 112,303*	92.5%	7.5%
	Hispanic *weighted n = 79,766*	88.2%	11.8%
	Other *weighted n = 32,183*	93.7%	6.3%
	All *weighted n = 642,625*	93.3%	6.7%
Full-time teachers	White *weighted n = 302,338*	94.9%	5.1%
	African American *weighted n = 97,657*	94.0%	6.0%
	Hispanic *weighted n = 70,162*	87.5%	12.5%
	Other *weighted n = 24,073*	96.7%	3.3%
	All *weighted n = 494,229*	93.8%	6.2%
Part-time teachers	White *weighted n = 116,035*	93.2%	6.8%
	African American *weighted n = 14,646*	82.2%	17.8%
	Hispanic *weighted n = 9,646*	93.8%	6.2%
	Other *weighted n = 8,110*	84.8%	15.2%
	All *weighted n = 148,437*	91.7%	8.3%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, National Survey of Early Care and Education (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 1G

Sample characteristics: Classroom age range

Share of teachers, by race and ethnicity

		Infant or toddler	Preschool
All teachers	White *weighted n = 418,373*	41.5%	58.5%
	African American *weighted n = 112,303*	59.4%	40.6%
	Hispanic *weighted n = 79,807*	46.6%	53.4%
	Other *weighted n = 32,183*	52.3%	47.7%
	All *weighted n = 642,666*	45.8%	54.2%
Full-time teachers	White *weighted n = 302,338*	43.0%	57.0%
	African American *weighted n = 97,657*	60.9%	39.1%
	Hispanic *weighted n = 70,162*	45.1%	54.9%
	Other *weighted n = 24,073*	54.9%	45.1%
	All *weighted n = 494,229*	47.4%	52.6%
Part-time teachers	White *weighted n = 116,035*	37.5%	62.5%
	African American *weighted n = 14,646*	49.6%	50.4%
	Hispanic *weighted n = 9,646*	57.3%	42.7%
	Other *weighted n = 8,110*	44.3%	55.7%
	All *weighted n = 148,437*	40.4%	59.6%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, National Survey of Early Care and Education (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 1H

Sample characteristics: Center sponsorship

Share of teachers, by race and ethnicity

		School-sponsored	Head Start	Public pre-K	Other
All teachers	White *weighted n = 418,348*	5.3%	9.2%	20.1%	65.4%
	African American *weighted n = 111,300*	2.1%	21.2%	18.6%	58.1%
	Hispanic *weighted n = 79,354*	7.3%	17.5%	28.8%	46.4%
	Other *weighted n = 32,175*	4.5%	8.2%	20.5%	66.8%
	All *weighted n = 641,177*	5.0%	12.3%	20.9%	61.8%
Full-time teachers	White *weighted n = 302,313*	5.5%	11.4%	20.2%	62.9%
	African American *weighted n = 97,638*	2.2%	22.8%	17.1%	57.9%
	Hispanic *weighted n = 69,710*	7.8%	19.1%	27.6%	45.6%
	Other *weighted n = 24,073*	6.0%	10.7%	21.2%	62.1%
	All *weighted n = 493,734*	5.2%	14.7%	20.7%	59.4%
Part-time teachers	White *weighted n = 116,035*	4.9%	3.6%	19.8%	71.8%
	African American *weighted n = 13,662*	1.3%	9.4%	29.5%	59.9%
	Hispanic *weighted n = 9,643*	3.8%	6.3%	37.7%	52.3%
	Other *weighted n = 8,102*	0.0%	0.9%	18.5%	80.5%
	All *weighted n = 147,442*	4.2%	4.1%	21.8%	69.9%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, National Survey of Early Care and Education (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 1I

Sample descriptives: Full- and part-time status

Share of teachers, by race and ethnicity

	White	African American	Hispanic	Other
All teachers *weighted n = 624,666*	65.1%	17.5%	12.4%	5.0%
Full-time *weighted n = 494,229*	61.2%	19.8%	14.2%	4.9%
Part-time *weighted n = 148,437*	78.2%	9.8%	6.5%	5.5%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 2A

Teachers' mean and median hourly wages, by race and ethnicity

	All teachers		Full-time		Part-time	
	Mean (standard error)	Median	Mean (standard error)	Median	Mean (standard error)	Median
All teachers	$13.58 (0.249)	$11.00	$13.39 (0.263)	$11.00	$14.26 (0.634)	$11.00
White	$14.16 (0.339)	$11.67	$13.86 (0.365)	$11.47	$14.99 (0.775)	$12.50
African American	$11.38 (0.398)	$9.79	$11.68 (0.442)	$10.00	$9.26 (0.438)	$8.25
Hispanic	$13.86 (0.643)	$11.75	$13.64 (0.674)	$11.75	$15.36 (2.05)	$12.00
Other	$12.87 (0.616)	$11.10	$13.38 (0.762)	$11.34	$11.57 (0.908)	$9.75

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, National Survey of Early Care and Education (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 2B

Teachers' mean and median hourly wages, by centers' census region and community characteristics

		All teachers		Full-time		Part-time	
		Mean (standard error)	Median	Mean (standard error)	Median	Mean (standard error)	Median
Census region	Northeast	$15.83 (0.981)	$12.50	$14.62 (1.010)	$12.00	$18.37 (2.074)	$15.00
	Midwest	$14.05 (0.486)	$11.34	$13.65 (0.507)	$11.25	$15.26 (1.203)	$11.55
	South	$12.21 (0.328)	$10.00	$12.39 (0.363)	$10.00	$11.37 (0.759)	$8.25
	West	$15.06 (0.447)	$13.72	$15.23 (0.526)	$13.72	$14.56 (0.825)	$13.13
Urbanicity	High-density urban	$13.71 (0.290)	$11.33	$13.49 (0.302)	$11.25	$14.55 (0.770)	$12.00
	Moderate-density urban	$12.71 (0.552)	$10.00	$12.86 (0.641)	$10.00	$12.28 (1.079)	$9.00
	Rural	$14.64 (0.859)	$11.42	$13.86 (0.822)	$11.43	$17.11 (2.387)	$11.25
Poverty density	Low	$13.69 (0.358)	$11.25	$13.19 (0.377)	$11.00	$15.10 (0.843)	$12.50
	Moderate	$13.62 (0.470)	$11.25	$13.94 (0.512)	$12.00	$12.31 (1.133)	$9.25
	High	$13.24 (0.461)	$10.63	$13.30 (0.508)	$11.00	$12.86 (1.209)	$9.00

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, National Survey of Early Care and Education (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 2C

Teachers' mean and median hourly wages, by education and experience

		All teachers		Full-time		Part-time	
		Mean (standard error)	Median	Mean (standard error)	Median	Mean (standard error)	Median
Highest level of education	Bachelor's degree or higher	$17.73 (0.470)	$15.98	$17.73 (0.504)	$16.37	$17.73 (1.119)	$15.00
	Some college or associate's degree	$11.20 (0.222)	$10.00	$10.96 (0.215)	$10.00	$12.26 (0.719)	$10.00
	High school graduate or less	$9.53 (0.251)	$8.75	$9.46 (0.252)	$9.00	$9.74 (0.653)	$8.00
Degree type	Early childhood education or related degree	$14.95 (0.339)	$12.75	$14.67 (0.352)	$12.50	$16.11 (0.948)	$13.00
	Unrelated or no degree	$11.11 (0.302)	$9.50	$10.75 (0.287)	$9.50	$12.04 (0.768)	$9.25
Certification status	Child development associate, or CDA, credential or state-certified	$15.45 (0.389)	$13.00	$15.09 (0.407)	$12.73	$17.04 (1.074)	$14.47
	Not certified	$11.40 (0.263)	$9.75	$11.21 (0.270)	$9.76	$11.93 (0.650)	$9.50
Years of experience	3 years or more	$13.85 (0.264)	$11.50	$13.59 (0.276)	$11.50	$14.77 (0.684)	$11.75
	Less than 3 years	$10.09 (0.498)	$9.00	$10.52 (0.668)	$9.00	$9.00 (0.313)	$8.95
Classroom age range	Infant or toddler	$11.20 (0.232)	$9.92	$10.93 (0.220)	$10.00	$12.27 (0.737)	$9.50
	Preschool	$15.64 (0.393)	$13.00	$15.64 (0.435)	$13.05	$15.64 (0.924)	$12.75

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 2D

Teachers' mean and median hourly wages, by center sponsorship

	All teachers		Full-time		Part-time	
	Mean (standard error)	Median	Mean (standard error)	Median	Mean (standard error)	Median
Other center	$12.62 (0.262)	$10.50	$12.11 (0.273)	$10.25	$14.18 (0.626)	$11.75
School-sponsored	$23.50 (1.579)	$21.54	$23.95 (1.818)	$21.56	$21.59 (3.002)	$16.65
Head Start	$14.74 (0.544)	$13.25	$14.88 (0.565)	$13.50	$12.97 (1.674)	$10.00
Public pre-K	$13.48 (0.627)	$10.25	$13.45 (0.576)	$10.40	$13.56 (1.852)	$10.00

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 3A

Availability of and access to professional development supports, by teachers' race and ethnicity

Share of full-time teachers whose program administrator reported that support is available to employees

	Funding to take college or training courses off-site	Paid time off to take college or training courses off-site	Mentors, coaches, and/or consultants
White *weighted n = 302,313*	66.7%	45.7%	52.7%
African American *weighted n = 97,638*	62.6%	43.5%	57.8%
Hispanic *weighted n = 69,710*	70.4%	41.2%	62.5%
Other *weighted n = 24,073*	54.4%	41.3%	61.9%
Total sample *weighted n = 493,734*	65.8%	44.4%	55.6%

Share of teachers who report access to supports

	Direct costs	Other participation costs	Release time
White *weighted n = 302,338*	52.7%	17.7%	44.1%
African American *weighted n = 97,657*	37.1%	11.8%	45.5%
Hispanic *weighted n = 70,162*	43.4%	12.2%	35.1%
Other *weighted n = 24,073*	38.0%	10.0%	33.9%
Total Sample *weighted n = 494,229*	47.5%	15.4%	42.6%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 3B

Availability of and access to health insurance benefits, by teachers' race and ethnicity

Share of teachers whose center reports offering health insurance to employees		Share of teachers, by type of insurance coverage				
			No coverage	Insurance plan from employer	Insurance plan from spouse or partner's employer	Medicaid, Medicare, military health care, or CHAMP
White *weighted n = 302,313*	64.8%	White *weighted n = 302,338*	20.9%	35.1%	27.0%	3.0%
African American *weighted n = 97,638*	56.0%	African American *weighted n = 97,657*	30.8%	34.7%	6.8%	15.0%
Hispanic *weighted n = 69,710*	75.0%	Hispanic *weighted n = 70,162*	23.9%	50.1%	17.4%	3.6%
Other *weighted n = 24,073*	59.5%	Other *weighted n = 24,073*	33.7%	39.2%	9.2%	3.3%
Total sample *weighted n = 493,734*	64.3%	Total sample *weighted n = 494,229*	23.9%	37.4%	20.8%	5.5%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

Appendix B: Regression methodology and results

Multiple regression analysis was used to examine the effect of various demographic characteristics on the logarithm of wages. Transforming the continuous hourly wage variable by the logarithmic function allows researchers to easily identify the percentage change in wages associated with each independent variable, holding other relevant variables constant.

The regression analysis described in the text of the report includes teachers who identified as full-time workers only. (see Table 5a) The regression results for part-time teachers, teachers with a bachelor's degree or higher, and all lead teachers are depicted in Tables 5b through 5d, respectively.

For each population, the authors constructed a series of six models that progressively added sets of related categorical independent variables. The primary variables of interest—the categorical race identifiers—were included in every model. Table 4 below identifies the six sets of variables and indicates which sets were included in each model. The first model, which includes only the race variables, represents the raw, or unconditional, association between race and wages—that is, the effect of race prior to accounting for other characteristics that could affect pay. The preferred model specification—specification 6—includes the full set of statistical control variables that the authors deemed relevant. In other words, specification 6 includes all measurable variables in the data set that we expect to be associated with staff wages and center revenue. For this reason, the estimates produced by specification 6 are used to draw conclusions about associations between race and teachers' compensation.

TABLE 4

Variable blocks included in each regression model

"✖" indicates that the variable block was included in the model.

		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Race/ethnicity	White* African American Hispanic Other	✖	✖	✖	✖	✖	✖
Region	Northeast Midwest South* West		✖	✖	✖	✖	✖
Community characteristics	**Urbanicity** High-density urban Moderate-density urban* Rural **Poverty density** Low* Moderate High			✖	✖	✖	✖
Teacher qualifications	**Highest level of education** Bachelor's degree or higher Associate's degree or some college High school or less* Early childhood education or related degree CDA and/or state-certified 3 years or more of experience **Classroom age range** Infant or toddler teacher Preschool teacher* **Full- or part-time status** Full-time Part-time*				✖	✖	✖
Program type	Other center* Head Start Public pre-k School-sponsored					✖	✖
Center size and revenue	Total employees (log)** Total enrollment (log)** Program charges a fee						✖

Note: * indicates that the category acted as the reference group for a given variable. If only one category is listed, nonmembers act as the reference group. Full-time versus part-time status was only included in the models for teachers with bachelor's degrees and the full sample. ** indicates that the variable was continuous.

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

As is depicted in Table 4, all variables included in the analyses were categorical and contained two to five levels or categories, with the exception of two variables describing the total child enrollment and the total number of employees at each center. For the purposes of the regression analyses, each categorical variable was recoded into individual variables—one for each category. For example, the variable describing center type included four categories: Head Start; public pre-K; school sponsored; and other. A separate variable was created for each center category. Thus, a teacher working in a Head Start center would have a value of "1"—indicating belonging to that category—for the Head Start variable and a value of "0" for each of the other center-type variables.

The regression coefficients for each independent variable can be interpreted as the percentage increase or decrease in wages associated with having that characteristic compared with the reference group, when the values of all other variables are held constant. For example, in specification 6 of Table 5a, the regression coefficient for the variable "Infant/Toddler teacher" is -0.062, which means that teachers in infant/toddler classrooms make 6.2 percent less than preschool teachers when all other variables are held constant.

In the tables below, statistically significant regression coefficients are indicated with asterisks and are also in bold text. All regression results include a constant term.

Due to the point-in-time nature of the data, all results should be interpreted as correlational rather than causal. In other words, while race may be significantly associated with lower wages—even when other factors are statistically controlled for, or held constant—one should not conclude that race necessarily causes lower wages. However, the presence of strong associations—which persist when we statistically control for multiple other factors that affect pay—suggest that causation could underlie the relationships shown in the tables below.

Table 5a presents the regression results for full-time lead teachers, described in the text of the report. African American full-time teachers earn 6.7 percent less than white full-time teachers, on average. Other notable, significant predictors of higher wages were having a bachelor's degree or higher; having three or more years of experience; holding a Child Development Associate Credential and/or a state certification; and working in a school-sponsored center. Working in an infant/toddler classroom was associated with slightly lower wages.

TABLE 5A

Results of multiple-regression analysis on hourly wages for full-time lead teachers

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
White						
African American	-0.169*** (0.040)	-0.123** (0.040)	-0.126** (0.043)	-0.047 (0.037)	-0.059 (0.035)	-0.067* (0.031)
Hispanic	-0.054 (0.067)	-0.045 (0.066)	-0.047 (0.064)	-0.041 (0.063)	-0.063 (0.060)	-0.089 (0.056)
Other	-0.031 (0.053)	-0.065 (0.048)	-0.076 (0.051)	-0.011 (0.049)	-0.016 (0.046)	-0.030 (0.051)
South						
Northeast		0.127* (0.057)	0.133* (0.057)	0.049 (0.048)	0.057 (0.045)	0.068 (0.041)
Midwest		0.086* (0.042)	0.091* (0.042)	0.043 (0.033)	0.042 (0.033)	0.066* (0.031)
West		0.211*** (0.043)	0.211*** (0.042)	0.167*** (0.039)	0.158*** (0.038)	0.165*** (0.036)
Moderate-density urban						
High-density urban			0.034 (0.047)	0.014 (0.036)	0.039 (0.033)	0.035 (0.032)
Rural			0.078 (0.068)	0.013 (0.048)	-0.002 (0.046)	-0.042 (0.044)
Low poverty						
Moderate poverty			0.029 (0.042)	0.024 (0.034)	0.005 (0.033)	-0.004 (0.033)
High poverty			0.022 (0.047)	-0.011 (0.042)	-0.037 (0.043)	-0.048 (0.042)
High School diploma or less						
Associate's degree or some college				-0.004 (0.044)	0.002 (0.043)	-0.003 (0.043)
Bachelor's degree or higher				0.346*** (0.048)	0.324*** (0.048)	0.305*** (0.045)
Less than 3 years of experience						
3 years or more of experience				0.152* (0.060)	0.144** (0.053)	0.136** (0.049)
No degree or unrelated degree						
Early childhood education or related degree				0.099** (0.037)	0.080* (0.037)	0.069 (0.036)
No certification						
Certified				0.152*** (0.027)	0.125*** (0.028)	0.106*** (0.025)

Table continues on next page

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Preschool class						
Infant or toddler class				-0.104*** (0.028)	-0.083** (0.028)	-0.068** (0.026)
Other center						
School-sponsored					0.399*** (0.070)	0.307*** (0.089)
Head Start					0.137*** (0.041)	0.011 (0.070)
Public pre-K					0.006 (0.044)	-0.015 (0.034)
No fee for attendance						
Program charges a fee						0.235** (0.072)
Log of total employees						0.006 (0.029)
Log of total children enrolled						0.016 (0.040)
Constant	2.539*** (0.022)	2.463*** (0.029)	2.419*** (0.047)	2.079*** (0.074)	2.070*** (0.069)	1.999*** (0.184)
Sample n	2113	2113	2109	2006	2006	1967
Weighted population N	447,633	447,633	447,147	424,212	424,212	416,723
R squared	0.021	0.050	0.054	0.348	0.387	0.415

Note: Italics indicate that the indicator served as the reference group. * signifies $p < 0.05$, ** signifies $p < 0.01$, and *** signifies $p < 0.001$.

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

As described in Appendix A, part-time teachers were analyzed separately to preserve the integrity of the wage gap analysis. Results reveal that among part-time workers, the wage gap is even greater, with African American teachers making 80 cents for every $1 white teachers make. (see Table 5b) A detailed investigation into why the wage gap may be larger for part-time workers is beyond the scope of this report. Previous research typically considers hourly wages for the workforce as a whole. The results of this analysis suggest that further research examining full- and part-time workers separately is warranted.

TABLE 5B

Results of multiple-regression analysis on hourly wages for part-time lead teachers

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
White						
African American	-0.405*** (0.054)	-0.327*** (0.050)	-0.296*** (0.059)	-0.239*** (0.059)	-0.221*** (0.052)	-0.195*** (0.052)
Hispanic	0.014 (0.125)	0.061 (0.114)	0.038 (0.113)	-0.027 (0.123)	0.010 (0.112)	0.016 (0.111)
Other	-0.184* (0.083)	-0.202* (0.096)	-0.213* (0.094)	-0.225** (0.079)	-0.216** (0.082)	-0.205* (0.080)
South						
Northeast		0.419*** (0.107)	0.382*** (0.105)	0.265** (0.096)	0.279** (0.095)	0.277** (0.093)
Midwest		0.279*** (0.084)	0.270** (0.088)	0.208** (0.080)	0.192* (0.080)	0.173* (0.082)
West		0.253** (0.077)	0.257*** (0.075)	0.189** (0.070)	0.171* (0.068)	0.174** (0.066)
Moderate-density urban						
High-density urban			0.135 (0.075)	0.065 (0.074)	0.073 (0.069)	0.042 (0.066)
Rural			0.191 (0.145)	0.072 (0.126)	0.113 (0.128)	0.014 (0.147)
Low poverty						
Moderate poverty			-0.096 (0.082)	-0.071 (0.065)	-0.082 (0.064)	-0.111 (0.068)
High poverty			-0.017 (0.077)	0.036 (0.064)	0.015 (0.062)	-0.044 (0.069)
High School diploma or less						
Associate's degree or some college				0.062 (0.085)	0.079 (0.083)	0.118 (0.077)
Bachelor's degree or higher				0.367*** (0.081)	0.369*** (0.079)	0.381*** (0.078)
Less than 3 years of experience						
3 years or more of experience				0.139** (0.045)	0.144** (0.046)	0.136** (0.050)
No degree or unrelated degree						
Early childhood education or related degree				0.027 (0.075)	0.034 (0.074)	0.051 (0.071)
No certification						
Certified				0.194** (0.060)	0.198*** (0.060)	0.184** (0.061)

Table continues on next page

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Preschool class						
Infant or toddler class				-0.113 (0.064)	-0.106 (0.062)	-0.082 (0.058)
Other center						
School-sponsored					0.005 (0.122)	-0.060 (0.116)
Head Start					-0.019 (0.091)	-0.098 (0.081)
Public pre-K					-0.150* (0.072)	-0.169** (0.059)
No fee for attendance						
Program charges a fee						0.342** (0.124)
Log of total employees						-0.068 (0.057)
Log of total children enrolled						0.081 (0.056)
Constant	2.581*** (0.044)	2.377*** (0.057)	2.299*** (0.083)	2.021*** (0.089)	2.033*** (0.090)	1.862*** (0.196)
Sample n	605	605	601	564	564	557
Weighted population N	129,691	129,691	128,696	117,752	117,752	115,065
R squared	0.067	0.183	0.206	0.412	0.429	0.468

Note: Italics indicate that the indicator served as the reference group. * signifies $p < 0.05$, ** signifies $p < 0.01$, and *** signifies $p < 0.001$.

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

The early childhood field is slowly moving toward requiring a bachelor's degree for lead teachers. The authors conducted a separate regression analysis for teachers with a bachelor's degree to determine whether racial wage gaps are minimized or exacerbated among educators with this credential. As discussed in the text of the report, race is not a significant predictor of wages when other variables of interest are held constant. The authors include both full- and part-time teachers in this regression analysis to maximize the sample size. Full- or part-time status is controlled for in the regression and is not a significant predictor of wages. (see Table 5c)

TABLE 5C

Results of multiple-regression analysis on hourly wages for all lead teachers with a bachelor's degree

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
White						
African American	-0.208* (0.085)	-0.172* (0.085)	-0.167 (0.089)	-0.134 (0.081)	-0.137 (0.075)	-0.105 (0.069)
Hispanic	-0.147 (0.138)	-0.119 (0.132)	-0.119 (0.121)	-0.124 (0.131)	-0.139 (0.122)	-0.196 (0.108)
Other	-0.196* (0.076)	-0.225** (0.077)	-0.199** (0.077)	-0.096 (0.067)	-0.102 (0.064)	-0.114 (0.066)
South						
Northeast		0.128 (0.078)	0.160* (0.074)	0.156* (0.074)	0.164* (0.071)	0.156* (0.067)
Midwest		0.045 (0.061)	0.057 (0.059)	0.023 (0.058)	0.041 (0.057)	0.058 (0.056)
West		0.125 (0.066)	0.145* (0.062)	0.146* (0.059)	0.140* (0.059)	0.157** (0.055)
Moderate-density urban						
High-density urban			0.007 (0.075)	0.037 (0.066)	0.062 (0.063)	0.064 (0.062)
Rural			0.242** (0.088)	0.168 (0.087)	0.153 (0.087)	0.065 (0.085)
Low poverty						
Moderate poverty			0.020 (0.060)	0.011 (0.054)	0.010 (0.053)	-0.025 (0.054)
High poverty			0.084 (0.081)	0.057 (0.080)	0.039 (0.080)	0.000 (0.080)
Less than 3 years of experience						
3 years or more of experience				0.242* (0.106)	0.222* (0.098)	0.193* (0.093)
No degree or unrelated degree						
Early childhood education or related degree				0.098 (0.059)	0.090 (0.058)	0.066 (0.056)
No certification						
Certified				0.169*** (0.048)	0.134** (0.049)	0.102* (0.046)
Part-time worker						
Full-time worker				0.021 (0.055)	0.043 (0.056)	0.060 (0.053)
Preschool class						
Infant or toddler class				-0.198*** (0.053)	-0.176** (0.055)	-0.131* (0.052)

Table continues on next page

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Other center						
School-sponsored					0.346*** (0.084)	0.233* (0.102)
Head Start					0.053 (0.070)	-0.149 (0.102)
Public pre-K					-0.003 (0.077)	-0.032 (0.056)
No fee for attendance						
Program charges a fee						0.335*** (0.093)
Log of total employees						0.004 (0.041)
Log of total children enrolled						-0.036 (0.065)
Constant	2.821*** (0.029)	2.760*** (0.047)	2.690*** (0.078)	2.325*** (0.141)	2.309*** (0.133)	2.483*** (0.317)
Sample n	1134	1134	1131	1079	1079	1058
Weighted population N	234,664	234,664	234,645	221,519	221,519	215,660
R squared	0.028	0.041	0.069	0.163	0.201	0.251

Note: Italics indicate that the indicator served as the reference group. * signifies $p < 0.05$, ** signifies $p < 0.01$, and *** signifies $p < 0.001$.

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

Finally, the authors conducted a regression analysis including all lead teachers and controlling for full- or part-time status. The trends are largely the same as those for full-time teachers, with education, experience, credentials, classroom age range, and center type all being significant predictors of wages. The consistency of the results across regression analyses—with race being significant in all analyses except when considering only teachers with a bachelor's degree—underscores that racial wage gaps are a persistent problem among early childhood teachers.

TABLE 5D

Results of multiple-regression analysis on hourly wages for all lead teachers

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
White						
African American	-0.204*** (0.036)	-0.145*** (0.036)	-0.139*** (0.040)	-0.069* (0.034)	-0.075* (0.033)	-0.082** (0.030)
Hispanic	-0.051 (0.061)	-0.030 (0.060)	-0.030 (0.058)	-0.036 (0.057)	-0.048 (0.054)	-0.074 (0.052)
Other	-0.074 (0.045)	-0.095* (0.042)	-0.101* (0.043)	-0.065 (0.044)	-0.061 (0.042)	-0.075 (0.045)
South						
Northeast		0.205*** (0.053)	0.207*** (0.052)	0.113* (0.046)	0.120** (0.044)	0.131** (0.041)
Midwest		0.126*** (0.038)	0.131*** (0.038)	0.081* (0.032)	0.083** (0.032)	0.103*** (0.030)
West		0.216*** (0.038)	0.223*** (0.037)	0.173*** (0.034)	0.159*** (0.033)	0.174*** (0.031)
Moderate-density urban						
High-density urban			0.063 (0.040)	0.028 (0.034)	0.045 (0.032)	0.037 (0.031)
Rural			0.126* (0.063)	0.038 (0.048)	0.032 (0.047)	-0.025 (0.047)
Low poverty						
Moderate poverty			-0.008 (0.038)	-0.000 (0.032)	-0.014 (0.031)	-0.029 (0.031)
High poverty			0.008 (0.042)	-0.006 (0.038)	-0.026 (0.039)	-0.046 (0.038)
High School diploma or less						
Associate's degree or some college				0.014 (0.041)	0.018 (0.040)	0.023 (0.040)
Bachelor's degree or higher				0.349*** (0.045)	0.337*** (0.044)	0.328*** (0.043)
Less than 3 years of experience						
3 years or more of experience				0.168*** (0.048)	0.167*** (0.044)	0.160*** (0.040)
No degree or unrelated degree						
Early childhood education or related degree				0.076* (0.035)	0.061 (0.036)	0.053 (0.035)
No certification						
Certified				0.168*** (0.026)	0.145*** (0.026)	0.126*** (0.024)

Table continues on next page

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Part-time worker						
Full-time worker				0.015 (0.032)	0.028 (0.032)	0.051 (0.031)
Preschool class						
Infant or toddler class				-0.110*** (0.027)	-0.093*** (0.027)	-0.068** (0.026)
Other center						
School-sponsored					0.329*** (0.064)	0.236** (0.076)
Head Start					0.112** (0.038)	-0.016 (0.059)
Public pre-K					-0.028 (0.039)	-0.044 (0.030)
No fee for attendance						
Program charges a fee						0.257*** (0.06)
Log of total employees						-0.015 (0.03)
Log of total children enrolled						0.027 (0.04)
Constant	2.550*** (0.020)	2.447*** (0.026)	2.389*** (0.041)	2.047*** (0.062)	2.038*** (0.059)	1.956*** (0.152)
Sample n	2718	2718	2710	2570	2570	2524
Weighted population N	577,324	577,324	575,843	541,964	541,964	531,788
R squared	0.028	0.068	0.074	0.349	0.376	0.409

Note: Italics indicate that the indicator served as the reference group. * signifies $p < 0.05$, ** signifies $p < 0.01$, and *** signifies $p < 0.001$.

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

Appendix C: Additional sample descriptive analyses, by teachers' race and ethnicity

Tables 6a through 6d display teachers' household characteristics—including whether teachers fall above or below a $15-per-hour wage threshold, their household income, how much of their household income comes from child care work, and their marital status by race and ethnicity. These descriptive analyses provide a more complete picture of the workforce and confirm the trends identified in the regression analyses. Notably, more than half of all white teachers have a household income of $45,000 per year or higher, while roughly 80 percent of African American teachers have an annual household income of $45,000 or less. Moreover, African American teachers are about twice as likely as white teachers to have all or almost all of their household income come from child care work.

The data depicted in these tables underscore the need for a comprehensive solution to early childhood teachers' low wages and limited access to workforce supports—one that raises the bar for the workforce as a whole and also strategically targets populations for whom increasing credential requirements creates a particularly significant burden.

TABLE 6A

Additional sample descriptives: Share of teachers making $15 per hour or more, by race and ethnicity

		Less than $15 per hour	$15 per hour or more
All teachers	White *weighted n = 418,373*	59.6%	40.4%
	African American *weighted n = 112,303*	71.5%	28.5%
	Hispanic *weighted n = 79,807*	61.4%	38.6%
	Other *weighted n = 32,183*	63.8%	36.5%
	All *weighted n = 642,666*	62.1%	37.9%
Full-time teachers	White *weighted n = 302,338*	62.2%	37.8%
	African American *weighted n = 97,657*	70.3%	29.7%
	Hispanic *weighted n = 70,162*	60.6%	39.4%
	Other *weighted n = 24,073*	59.7%	40.3%
	All *weighted n = 494,229*	63.4%	36.6%
Part-time teachers	White *weighted n = 116,035*	53.0%	47.0%
	African American *weighted n = 14,646*	79.7%	20.3%
	Hispanic *weighted n = 9,646*	67.2%	32.8%
	Other *weighted n = 8,110*	76.2%	23.8%
	All *weighted n = 148,437*	57.8%	42.2%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 6B

Additional sample descriptives: Annual household income

Share of teachers, by race and ethnicity

		Less than $15,000	$15,000 to $30,000	$30,000 to $45,000	$45,000 and higher
All teachers	White *weighted n = 359,289*	13.3%	18.7%	16.9%	51.1%
	African American *weighted n = 97,842*	32.0%	34.4%	14.0%	19.5%
	Hispanic *weighted n = 71,496*	18.6%	27.1%	26.1%	28.2%
	Other *weighted n = 24,620*	16.2%	30.8%	17.6%	35.4%
	All *weighted n = 553,247*	17.4%	23.1%	17.6%	41.9%
Full-time teachers	White *weighted n = 267,127*	12.6%	21.5%	18.5%	47.3%
	African American *weighted n = 85,380*	30.6%	35.8%	14.7%	18.9%
	Hispanic *weighted n = 62,179*	17.7%	29.2%	26.7%	26.4%
	Other *weighted n = 19,584*	17.2%	27.3%	19.8%	35.8%
	All *weighted n = 434,270*	17.1%	25.7%	19.0%	38.2%
Part-time teachers	White *weighted n = 92,162*	15.1%	10.3%	12.2%	62.3%
	African American *weighted n = 12,462*	41.6%	25.4%	8.9%	24.0%
	Hispanic *weighted n = 9,317*	24.9%	13.6%	21.7%	39.9%
	Other *weighted n = 5,036*	12.7%	44.6%	8.7%	34.0%
	All *weighted n = 118,977*	18.6%	13.6%	12.5%	55.4%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 6C

Additional sample descriptives: Share of household income that comes from child care work, by teachers' race and ethnicity

		All or most	Half or more	Less than half	Little or none
All teachers	White *weighted n = 394,919*	28.4%	17.1%	26.6%	27.9%
	African American *weighted n = 108,065*	57.4%	15.4%	14.2%	12.9%
	Hispanic *weighted n = 77,114*	46.0%	17.5%	18.8%	17.7%
	Other *weighted n = 26,675*	40.3%	13.9%	25.4%	20.3%
	All *weighted n = 606,773*	36.3%	16.7%	23.4%	23.6%
Full-time teachers	White *weighted n = 288,835*	32.2%	19.9%	27.4%	20.5%
	African American *weighted n = 94,642*	60.0%	15.7%	12.6%	11.6%
	Hispanic *weighted n = 64,493*	49.7%	19.2%	15.7%	15.4%
	Other *weighted n = 20,529*	44.0%	11.3%	25.6%	19.0%
	All *weighted n = 471,500*	40.8%	18.6%	22.7%	17.9%
Part-time teachers	White *weighted n = 106,084*	18.2%	9.5%	24.5%	47.9%
	African American *weighted n = 13,423*	38.9%	13.4%	25.6%	22.1%
	Hispanic *weighted n = 9,620*	19.8%	5.9%	40.4%	33.9%
	Other *weighted n = 6,146*	27.9%	22.8%	24.6%	24.7%
	All *weighted n = 135,273*	20.8%	10.2%	25.7%	43.3%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 6D

Additional sample descriptives: Marital status

Share of teachers, by race and ethnicity

		Single, divorced, or widowed	Married
All teachers	White *weighted n = 417,520*	31.1%	68.9%
	African American *weighted n = 110,696*	61.7%	38.3%
	Hispanic *weighted n = 79,482*	39.0%	61.0%
	Other *weighted n = 29,942*	29.8%	70.2%
	All *weighted n = 637,640*	37.3%	62.7%
Full-time teachers	White *weighted n = 302,169*	34.3%	65.7%
	African American *weighted n = 94,500*	62.3%	37.7%
	Hispanic *weighted n = 69,903*	41.5%	58.5%
	Other *weighted n = 23,187*	30.3%	69.7%
	All *weighted n = 491,760*	40.6%	59.4%
Part-time teachers	White *weighted n = 115,351*	22.8%	77.2%
	African American *weighted n = 14,195*	57.5%	42.5%
	Hispanic *weighted n = 9,579*	20.9%	79.1%
	Other *weighted n = 6,755*	28.2%	71.8%
	All *weighted n = 145,881*	26.3%	73.7%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 7

Additional sample descriptives: Mean and median wages, by teachers' household characteristics

		All teachers		Full-time teachers		Part-time teachers	
		Mean (standard error)	Median	Mean (standard error)	Median	Mean (standard error)	Median
$15 per hour wage threshold	$15 per hour or more	$21.94 (0.438)	$19.66	$21.48 (0.454)	$19.26	$23.37 (1.085)	$22.00
	Less than $15 per hour	$9.81 (0.095)	$9.65	$9.86 (0.111)	$9.78	$9.62 (0.174)	$9.00
Annual household income	Less than $15,000	$9.72 (0.309)	$8.40	$9.76 (0.327)	$8.69	$9.56 (0.772)	$8.00
	$15,000 to $30,000	$11.32 (0.222)	$10.25	$11.31 (0.231)	$10.62	$11.38 (0.741)	$10.00
	$30,000 to $45,000	$14.44 (0.598)	$12.09	$14.47 (0.645)	$12.50	$14.28 (1.591)	$11.25
	$45,000 and higher	$16.49 (0.509)	$14.10	$16.19 (0.568)	$14.00	$17.22 (1.067)	$15.00
Share of household income that comes from child care work	All or most	$13.50 (0.425)	$11.00	$13.32 (0.385)	$11.22	$14.69 (2.004)	$9.00
	Half or more	$14.83 (0.745)	$12.00	$14.78 (0.787)	$12.00	$15.21 (2.265)	$10.25
	Less than half	$14.50 (0.511)	$12.65	$14.50 (0.551)	$12.97	$14.49 (1.197)	$11.25
	Little or none	$12.19 (0.442)	$10.33	$10.90 (0.499)	$9.83	$14.06 (0.740)	$12.50
Marital status	Married	$14.15 (0.327)	$12.00	$14.03 (0.386)	$11.75	$14.50 (0.615)	$12.50
	Single, divorced, or widowed	$12.72 (0.385)	$10.00	$12.50 (0.322)	$10.29	$13.87 (1.653)	$9.00

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

Appendix D: Other descriptive analyses of interest, by center type

Tables 8a through 8d display how lead teachers' credentials vary by program type. Many of the notable trends are consistent with previous research. For instance, a larger proportion of teachers in school-sponsored centers have a bachelor's degree compared with those in other public programs; similarly, teachers in school-sponsored and Head Start centers are more likely to hold a Child Development Associate Credential and/or a state certification.

TABLE 8A

Additional sample descriptives: Teachers' highest level of education

Share of teachers, by center sponsorship

	High school or less	Associate's degree or some college	Bachelor's degree or higher
Other center *weighted n = 396,243*	19.00%	43.60%	37.30%
School-sponsored *weighted n = 31,721*	0.82%	16.30%	82.90%
Head Start *weighted n = 79,090*	8.53%	49.50%	41.90%
Public pre-K *weighted n = 134,300*	15.40%	41.40%	43.20%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 8B

Additional sample descriptives: Teachers' certification status

Share of teachers, by center sponsorship

	Not certified	CDA and/or state certified
Other center *weighted n = 375,571*	51.30%	48.70%
School-sponsored *weighted n = 30,171*	13.60%	86.40%
Head Start *weighted n = 77,774*	29.80%	70.20%
Public pre-K *weighted n = 129,631*	43.50%	56.50%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 8C

Additional sample descriptives: Teachers' years of experience

Share of teachers, by center sponsorship

	Less than 3 years	3 years or more
Other center *weighted n = 397,295*	7.86%	92.10%
School-sponsored *weighted n = 31,721*	0.63%	99.40%
Head Start *weighted n = 79,090*	7.37%	92.60%
Public pre-K *weighted n = 134,347*	3.62%	96.40%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

TABLE 8D

Additional sample descriptives: Teachers' classroom age range

Share of teachers, by center sponsorship

	Preschool	Infant or Toddler
Other center *weighted n = 397,295*	49.10%	50.90%
School-sponsored *weighted n = 31,721*	87.20%	12.80%
Head Start *weighted n = 79,090*	64.40%	35.60%
Public pre-K *weighted n = 134,388*	55.40%	44.60%

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, National Survey of Early Care and Education (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

Table 8e shows how centers are distributed across community characteristics.[106] Notably, programs are generally concentrated in high-density urban areas. With the exception of Head Start programs, which are evenly distributed across communities of varying poverty densities, more than half of all program types are located in low-poverty communities.

TABLE 8E

Additional sample descriptives: Community characteristics of center

Share of teachers, by center sponsorship

	Urbanicity			Poverty density		
	High-density urban	Moderate-density urban	Rural	Low	Moderate	High
Other center *weighted n = 567,917*	66.80%	22.80%	9.96%	62.10%	21.80%	21.50%
School-sponsored *weighted n = 58,336*	57.60%	22.60%	19.80%	54.30%	24.60%	21.10%
Head Start *weighted n = 136,908*	58.90%	26.80%	14.30%	32.60%	30.20%	37.10%
Public pre-K *weighted n = 202,738*	70.80%	19.00%	10.20%	58.40%	22.20%	19.50%

Note: "Teachers" include aides, assistants, and teachers/lead teachers who work full- and part-time.

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, National Survey of Early Care and Education (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

Finally, Table 8f depicts which providers offer supports to employees for professional development and health insurance.[107] Head Start programs stand out as being most likely to provide financial support for professional development, as well as to offer health insurance.

TABLE 8F

Additional sample descriptives: Provider-reported workforce supports offered

Share of teachers whose program administrator reported that support is available to employees

	Funding to take college or training courses off-site	Paid time off to take college or training courses off-site	Provides mentors, coaches, and/or consultants	Health insurance
Other center *weighted n = 567,917*	63.60%	38.10%	45.30%	52.80%
School-sponsored *weighted n = 58,336*	60.50%	52.20%	73.40%	87.60%
Head Start *weighted n = 136,908*	87.30%	60.80%	79.70%	90.80%
Public pre-K *weighted n = 202,738*	63.50%	45.10%	53.90%	61.10%

Note: "Teachers" include aides, assistants, and teachers/lead teachers who work full- and part-time.

Source: Authors' calculations are based on data from Office of Planning, Research, and Evaluation, *National Survey of Early Care and Education* (U.S. Department of Health and Human Services, 2014), available at http://www.researchconnections.org/childcare/studies/35519.

Endnotes

1 Bureau of the Census, *Child Care: An Important Part of American Life* (U.S. Department of Commerce, 2013), available at https://www.census.gov/how/pdf/child_care.pdf.

2 The National Survey of Early Care and Education defines a center-based program as one that serves at least one child 5 years old or younger who is not yet in kindergarten, by a single organization at a single location. For detailed information on the NSECE Center-Based Provider Survey, see NSECE Project Team, "NSECE Downloadable Presentation III: Center-Based Provider Survey," available at http://www.researchconnections.org/childcare/resources/30573/pdf (last accessed July 2016). For a list of the types of child care centers or preschools included in the analyses presented in this report, see the text box on page 12.

3 Kids Count Data Center, "Child Under Age 6 With All Available Parents In The Labor Force," available at http://datacenter.kidscount.org/data/tables/5057-children-under-age-6-with-all-available-parents-in-the-labor-force?loc=1&loct=1#detailed/1/any/false/869,36,868,867,133/any/11472,11473 (last accessed June 2016).

4 U.S. Department of Health and Human Services and U.S. Department of Education, *High-Quality Early Learning Settings Depend on a High-Quality Workforce: Low Compensation Undermines Quality* (2016), available at https://www.acf.hhs.gov/sites/default/files/ecd/ece_low_compensation_undermines_quality_report_june_10_2016_508.pdf; Andrew J. Mashburn and others, "Measures of Classroom Quality in Prekindergarten and Children's Development of Academic, Language, and Social Skills," *Child Development* 79 3 (2008): 732–749; Ellen S. Peisner-Feinberg and others, "The Relation of Preschool Child-Care Quality to Children's Cognitive and Social Developmental Trajectories through Second Grade," *Child Development* 72 5 (2001): 1534–1553; Robert Pianta and others, "Features of Pre-Kindergarten Programs, Classrooms, and Teachers: Do They Predict Observed Classroom Quality and Child-Teacher Interactions?", *Applied Developmental Science* 9 3 (2005): 144–159.

5 Kimberly Boller, Kate Tarrant, and Diana D. Schaack, "Early Care and Education Quality Improvement: A Typology of Intervention Approaches" (Washington: Office of Planning, Research & Evaluation, 2014), available at https://www.acf.hhs.gov/sites/default/files/opre/qi_brief_508_compliant.pdf; Hannah Matthews and others, "Child Care Program Standards and Quality Improvement Activities." In Hannah Matthews and others, *Implementing the Child Care and Development Block Grant Reauthorization: A Guide for States* (Washington: Center for Law and Social Policy and National Women's Law Center, 2015), available at http://www.clasp.org/issues/child-care-and-early-education/pages/body/Chapter3_CCDBGGuide.pdf; Sheila Smith and others, "Coaching and Quality Assurance in Quality Rating and Improvement Systems" (New York: National Center for Children in Poverty, 2012), available at http://www.nccp.org/publications/pdf/text_1047.pdf.

6 Margaret Burchinal and others, "Threshold Analysis of Association Between Child Care Quality and Child Outcomes for Low-Income Children in Pre-Kindergarten Programs," *Early Childhood Research Quarterly* 25 (2010): 166–176; Mashburn and others, "Measures of Classroom Quality in Prekindergarten and Children's Development of Academic, Language, and Social Skills"; Hirokazu Yoshikawa and others, "Investing in Our Future: The Evidence Base on Preschool Education" (New York and Washington: Foundation for Child Development and Society for Research in Child Development, 2013), available at http://srcd.org/sites/default/files/documents/washington/mb_2013_10_16_investing_in_children.pdf.

7 Burchinal and others, "Threshold Analysis of Association Between Child Care Quality and Child Outcomes for Low-Income Children in Pre-Kindergarten Programs"; Elise Gould, "Child Care Workers Aren't Paid Enough to Make Ends Meet" (Washington: Economic Policy Institute, 2015), available at http://www.epi.org/publication/child-care-workers-arent-paid-enough-to-make-ends-meet/; Marcy Whitebook, Deborah Phillips, and Carollee Howes, "Worthy Work, STILL Unlivable Wages: The Early Childhood Workforce 25 Years after the National Child Care Staffing Study" (Berkeley, CA: Center for the Study of Child Care Employment, 2014), available at http://www.irle.berkeley.edu/cscce/wp-content/uploads/2014/11/ReportFINAL.pdf; Martha Zaslow and others, "Quality Thresholds, Features, and Dosage in Early Care and Education: Introduction and Literature Review," *Monographs of the Society for Research in Child Development* 81 (2) (2016), available at https://www.mathematica-mpr.com/our-publications-and-findings/publications/introduction-and-literature-review-quality-thresholds-features-and-dosage-in-early-care.

8 Gould, "Child Care Workers Aren't Paid Enough to Make Ends Meet"; U.S. Bureau of Labor Statistics, "May 2015 National Occupational Employment and Wage Estimates: United States," available at http://www.bls.gov/oes/current/oes_nat.htm (last accessed May 2016).

9 Gould, "Child Care Workers Aren't Paid Enough to Make Ends Meet."

10 For the purposes of reporting the results of our analyses, "teachers" refers to respondents in the center-based NSECE sample who self-identified their gender as female, their employment status as full time, and their role as a lead teacher or teacher/instructor.

11 Author's own calculations, assuming full-time workers log 40 hours per week, 4.2 weeks per month, 12 months per year.

12 W. Steven Barnett, "Low Wages = Low Quality: Solving the Real Preschool Teacher Crisis," *Preschool Policy Matters* (3) (2003): 1–8, available at http://nieer.org/resources/policybriefs/3.pdf.

13 Marcy Whitebook, "Building a Skilled Teacher Workforce: Shared and Divergent Challenges in Early Care and Education and in Grades K-12" (Berkeley, CA: Center for the Study of Child Care Employment, 2014), available at http://www.irle.berkeley.edu/cscce/wp-content/uploads/2014/09/Building-a-Skilled-Teacher-Workforce_September-2014_9-25.pdf.

14 Julie Kashen, Halley Potter, and Andrew Stettner, "Quality Jobs, Quality Child Care: The Case for a Well-Paid, Diverse Early Education Workforce" (New York: The Century Foundation, 2016), available at https://tcf.org/content/report/quality-jobs-quality-child-care; authors' own calculations are based on data from U.S. Department of Health and Human Services, *National Survey of Early Care and Education, 2012* (2014), available at http://www.researchconnections.org/childcare/studies/35519.

15 Farah Z. Ahmad and Ulrich Boser, "America's Leaky Pipeline for Teachers of Color" (Washington: Center for American Progress, 2014), available at https://www.americanprogress.org/issues/race/report/2014/05/04/88960/americas-leaky-pipeline-for-teachers-of-color/.

16 Katie Hamm and Carmel Martin, "A New Vision for Child Care in the United States" (Washington: Center for American Progress, 2015), available at https://www.americanprogress.org/issues/early-childhood/report/2015/09/02/119944/a-new-vision-for-child-care-in-the-united-states-3/.

17 Kids Count Data Center, "Child Under Age 6 With All Available Parents In The Labor Force."

18 U.S. Department of Health and Human Services and U.S. Department of Education, *High-Quality Early Learning Settings Depend on a High-Quality Workforce*; Burchinal and others, "Threshold Analysis of Association Between Child Care Quality and Child Outcomes for Low-Income Children in Pre-Kindergarten Programs"; Mashburn and others, "Measures of Classroom Quality in Prekindergarten and Children's Development of Academic, Language, and Social Skills"; National Association for the Education of Young Children, "High-Quality Early Childhood Educators are the Key to Quality Programs for Children," available at https://www.naeyc.org/files/naeyc/201NAEYC_Childhood%20Educators.pdf (last accessed July 2016).

19 Office of Head Start, *Statutory Degree and Credentialing Requirements for Head Start Teaching Staff ACF-IM-HS-08-12* (U.S. Department of Health and Human Services, 2012), available at https://eclkc.ohs.acf.hhs.gov/hslc/standards/im/2008/resour_ime_012_0081908.html.

20 Diane Schilder, "Early Childhood Teacher Education Policies: Research Review and State Trends" (New Brunswick, NJ: Center on Enhancing Early Learning Outcomes, 2016), available at http://ceelo.org/wp-content/uploads/2016/04/ceelo_policy_report_ec_teach_education_policies_final_for_web_2016_04.pdf.

21 W. Steven Barnett and others, "The State of Preschool 2015: State Preschool Yearbook" (New Brunswick, NJ: National Institute for Early Education Research, 2016), available at http://nieer.org/sites/nieer/files/2015%20Yearbook.pdf; Matthews and others, "Child Care Program Standards and Quality Improvement Activities."

22 Whitebook, Phillips, and Howes, "Worthy Work, STILL Unlivable Wages"; Marcy Whitebook, Carollee Howes, and Deborah Phillips, "Worthy Work, Unlivable Wages: The National Child Care Staffing Study, 1988-1997" (Washington: Center for the Child Care Workforce, 1998), available at http://www.irle.berkeley.edu/cscce/wp-content/uploads/2010/07/Worthy-Work-Unlivable-Wages.pdf.

23 Gould, "Child Care Workers Aren't Paid Enough to Make Ends Meet"; U.S. Bureau of Labor Statistics, "May 2015 National Occupational Employment and Wage Estimates: United States."

24 Gould, "Child Care Workers Aren't Paid Enough to Make Ends Meet"; Whitebook, Phillips, and Howes, "Worthy Work, STILL Unlivable Wages."

25 Mashburn and others, "Measures of Classroom Quality in Prekindergarten and Children's Development of Academic, Language, and Social Skills"; Yoshikawa and others, "Investing in Our Future."

26 Institute of Medicine and National Research Council, *Transforming the Workforce for Children Birth Through 8: A Unifying Foundation* (Washington: The National Academies Press, 2015), available at http://www.nap.edu/catalog/19401/transforming-the-workforce-for-children-birth-through-age-8-a; Jack P. Shonkoff and Deborah A. Phillips, eds., *From Neurons to Neighborhoods: The Science of Early Childhood Development* (Washington: The National Academies Press, 2000).

27 Whitebook, Phillips, and Howes, "Worthy Work, STILL Unlivable Wages."

28 Maryam Adamu and Katie Hamm, "How Low Child Care Wages Put All Children at Risk," TalkPoverty, December 12, 2014, available at https://talkpoverty.org/2014/12/12/low-child-care-wages/.

29 National Survey of Early Care and Education Project Team, "Fact Sheet: Characteristics of Center-Based Early Care and Education Programs" (Washington: Office of Planning, Research & Evaluation, 2014), available at http://www.acf.hhs.gov/sites/default/files/opre/characteristics_of_cb_fact_sheet_final_111014.pdf.

30 Ibid.

31 Marcy Whitebook, Caitlin McLean, and Lea J.E. Austin, "The Early Childhood Workforce Index" (Berkeley, CA: Center for the Study of Child Care Employment, 2016), available at http://cscce.berkeley.edu/early-childhood-workforce-index/.

32 W. Steven Barnett and others, "The State of Preschool 2015"; Melanie Trottman, "Where Child-Care Workers and Early Educators Earn the Most and Least," Real Time Economics, July 11, 2016, available at http://blogs.wsj.com/economics/2016/07/11/where-child-care-workers-earn-the-most-and-least/.

33 Campaign for Children and United Neighborhood Houses, "Losing the Best" (2016), available at http://www.campaignforchildrennyc.com/wp-content/uploads/2016/03/losing-the-best.pdf.

34 U.S. Department of Health and Human Services and U.S. Department of Education, "High-Quality Early Learning Settings Depend on a High-Quality Workforce"; Gould, "Child Care Workers Aren't Paid Enough to Make Ends Meet"; Kashen and others, "Quality Jobs, Quality Child Care"; Whitebook, Phillips, and Howes, "Worthy Work, STILL Unlivable Wages;" Whitebook, McLean, and Austin, "The Early Childhood Workforce Index."

35 Debra J. Ackerman, "The Costs of Being a Child Care Teacher: Revisiting the Problem of Low Wages," *Educational Policy* 20 1 (2006): 85–112.

36 Center on the Developing Child, "In Brief: The Science of Early Childhood Development" (Cambridge, MA: Harvard University Center on the Developing Child, 2015), available at http://46y5eh11fhgw3ve3ytpwxt9r.wpengine.netdna-cdn.com/wp-content/uploads/2015/03/InBrief-The-Science-of-Early-Childhood-Development.pdf; Center for the Study of Child Care Employment, "Early Childhood Educator Competencies: A Literature Review of Current Best Practices, and a Public Input Process on Next Steps for California" (2008), available at http://files.eric.ed.gov/fulltext/ED505290.pdf.

37 Women's Bureau, *Traditional and Nontraditional Occupations* (U.S. Department of Labor, 2014), available at https://www.dol.gov/wb/stats/TraditionalOccupations.pdf; Emily Liner, "A Dollar Short: What's Holding Women Back from Equal Pay?" (Washington: Third Way, 2016), available at http://www.thirdway.org/report/a-dollar-short-whats-holding-women-back-from-equal-pay; Iliana Teltelman, "On the History of Teaching and the Value of 'Women's Work,'" The Toast, December 21, 2015, available at http://the-toast.net/2015/12/21/history-teaching-womens-work/.

38 Ackerman, "The Costs of Being a Child Care Teacher"; David M. Katzman, *Seven Days a Week: Women and Domestic Service in Industrializing America* (Chicago: University of Illinois Press, 1981).

39 Angela Hattery, *Women, Work, and Families: Balancing and Weaving* (Thousand Oaks, CA: Sage Publications Inc., 2001).

40 Evelyn Nakano Glenn, *Forced to Care: Coercion and Caregiving in America* (Cambridge, MA: Harvard University Press, 2010), available at https://caringlabor.files.wordpress.com/2012/05/forced-to-care.pdf.

41 Jessie Daniels, "The Second Wave: Trouble with White Feminism," Racism Review, March 4, 2014, available at http://www.racismreview.com/blog/2014/03/04/second-wave-white-feminism/; Caitlin Flanagan, "How Serfdom Saved the Women's Movement," *The Atlantic*, March 2004, available at http://www.theatlantic.com/magazine/archive/2004/03/how-serfdom-saved-the-women-s-movement/302892/.

42 National Domestic Workers Alliance, "History of the Domestic Work Industry in the US: Curriculum and Facilitation Guide" (New York: National Domestic Workers Alliance), available at http://www.domesticworkers.org/sites/default/files/NDWA_The_History_of_Domestic_Workers_Facilitation_Guide_and_Materials.pdf (last accessed July 2016).

43 National Center for Education Statistics, "Table 104.20. Percentage of persons 25 to 29 years old with selected levels of educational attainment, by race/ethnicity and sex: Selected years, 1920 through 2015," available at http://nces.ed.gov/programs/digest/d15/tables/dt15_104.20.asp (last accessed May 2016); Milia Fisher, "Women of Color and the Gender Wage Gap" (Washington: Center for American Progress, 2015), available at https://www.americanprogress.org/issues/women/report/2015/04/14/110962/women-of-color-and-the-gender-wage-gap/.

44 Authors' own calculations based on data from U.S. Department of Health and Human Services, *National Survey of Early Care and Education, 2012*.

45 Catherine Hall, "The Simple Truth about the Gender Pay Gap: Spring 2016" (Washington: American Association of University Women, 2016), available at http://www.aauw.org/resource/the-simple-truth-about-the-gender-pay-gap/.

46 National Survey of Early Care and Education Project Team, "Number and Characteristics of Early Care and Education (ECE) Teachers and Caregivers: Initial Findings from the National Survey of Early Care and Education (NSECE)" (Washington: Office of Planning, Research & Evaluation, 2013), available at http://www.acf.hhs.gov/sites/default/files/opre/nsece_wf_brief_102913_0.pdf.

47 Maki Park and others, "Immigrant and Refugee Workers in the Early Childhood Field: Taking a Closer Look" (Washington: Migration Policy Institute, 2015), available at http://www.migrationpolicy.org/research/immigrant-and-refugee-workers-early-childhood-field-taking-closer-look; Kashen and others, "Quality Jobs, Quality Child Care."

48 Ibid.

49 Park and others, "Immigrant and Refugee Workers in the Early Childhood Field."

50 U.S. Department of Health and Human Services, *National Survey of Early Care and Education, 2012*.

51 Full-time teachers are defined as those who work 35 hours per week or more. National Survey of Early Care and Education Project Team, "Codebook for Workforce Quick Tabulation File," available at http://www.researchconnections.org/childcare/studies/35519 (last accessed July 2016).

52 Gould, "Child Care Workers Aren't Paid Enough to Make Ends Meet."

53 Authors' calculations are based on data from U.S. Department of Health and Human Services, *National Survey of Early Care and Education, 2012*. Estimates assume that full-time workers log 40 hours per week, 4.2 weeks per month, 12 months per year.

54 Preschool classrooms are those serving children older than age 3 through age 5, not yet in school. See National Survey of Early Care and Education Project Team, "Codebook for Workforce Quick Tabulation File."

55 Authors' calculations are based on data from U.S. Department of Health and Human Services, *National Survey of Early Care and Education, 2012*. Estimates assume that full-time workers log 40 hours per week, 4.2 weeks per month, 12 months per year.

56 National Survey of Early Care and Education Project Team, "Number and Characteristics of Early Care and Education (ECE) Teachers and Caregivers."

57 Authors' calculations are based on data from U.S. Department of Health and Human Services, *National Survey of Early Care and Education, 2012*. In this case, publicly funded programs refer to Head Start and state-funded public pre-K.

58 Authors' calculations are based on data from ibid. Authors' assume that white teachers earn $13.39 per hour and that full-time teachers log 40 hours per week, 4.2 weeks per month, 12 months per year.

59 Andrew Woo, "June 2016 National Apartment List Rent Report," Rentonomics by Apartment List, June 29, 2016, available at https://www.apartmentlist.com/rentonomics/national-rent-data/.

60 Sarah Jane Glynn, Jane Farrell, and Nancy Wu, "The Importance of Preschool and Child Care for Working Mothers" (Washington: Center for American Progress, 2013), available at https://www.americanprogress.org/issues/education/report/2013/05/08/62519/the-importance-of-preschool-and-child-care-for-working-mothers/.

61 Estimates assume the use of the thrifty plan for one female 19 to 50 years old and the thrifty plan for a family of four with children ages 2 to 3 and 4 to 5. See U.S. Department of Agriculture, *Official USDA Food Plans: Cost of Food at Home at Four Levels, U.S. Average, December 2015* (2016), available at http://www.cnpp.usda.gov/sites/default/files/CostofFoodDec2015.pdf.

62 Estimates use the average monthly payment for all college majors with default settings. See The Hamilton Project, "Undergraduate Student Loan Calculator," available at http://www.hamiltonproject.org/charts/interactive_embed/undergraduate_student_loan_calculator (last accessed June 2016).

63 Estimates assume the receipt of tax credits. See Office of the Assistant Secretary for Planning and Evaluation, *Health Insurance Marketplace Premiums after Shopping, Switching, and Premium Tax Credits, 2015-2016* (U.S. Department of Health and Human Services, 2016), available at https://aspe.hhs.gov/sites/default/files/pdf/198636/MarketplaceRate.pdf.

64 AAA, "Annual Cost to Own and Operate a Vehicle Falls to $8,698, Finds AAA," Press release, April 21, 2015, available at http://newsroom.aaa.com/2015/04/annual-cost-operate-vehicle-falls-8698-finds-aaa-archive/.

65 College Board, "Tuition and Fees and Room and Board over Time," available at http://trends.collegeboard.org/college-pricing/figures-tables/tuition-and-fees-and-room-and-board-over-time-1 (last accessed June 2016).

66 Council for Professional Recognition, "Apply for CDA," available at http://www.cdacouncil.org/credentials/apply-for-cda (last accessed June 2016).

67 National Association for the Education of Young Children, "2016 NAEYC Institute Registration Form" (2016), on file with authors.

68 Whitebook, Phillips, and Howes, "Worthy Work, STILL Unlivable Wages"; Whitebook, Howes, and Phillips, "Worthy Work, Unlivable Wages"; Marcy Whitebook and Laura Sakai, "Turnover Begets Turnover: An Examination of Job and Occupational Instability Among Child Care Center Staff," *Early Childhood Research Quarterly* 18 (2003): 273–293, available at http://cscce.berkeley.edu/files/2003/turnoverchildcare.pdf.

69 Josh Bivens and others, "Raising America's Pay: Why It's Our Central Economic Policy Challenge" (Washington: Economic Policy Institute, 2014), available at http://www.epi.org/publication/raising-americas-pay/; Heather Boushey and Sarah Jane Glynn, "There Are Significant Business Costs to Replacing Employees" (Washington: Center for American Progress, 2012), available at https://www.americanprogress.org/issues/labor/report/2012/11/16/44464/there-are-significant-business-costs-to-replacing-employees/.

70 Authors' analysis are based on data from U.S. Department of Health and Human Services, *National Survey of Early Care and Education, 2012*; Barnett and others, "The State of Preschool 2015"; Matthews and others, "Child Care Program Standards and Quality Improvement Activities."

71 Respondents for the NSECE Center-Based Provider Survey could be directors, coordinators, or lead teachers who are knowledgeable about staffing and enrollment of early care and education classrooms and activities. For more information, please see NSECE Project Team, "NSECE Downloadable Presentation III: Center-Based Provider Survey."

72 Adamu and Hamm, "How Low Child Care Wages Put All Children at Risk."

73 Authors' calculations are based on data from U.S. Department of Health and Human Services, *National Survey of Early Care and Education, 2012*.

74 Release time—or approved time off to participate in a professional development activity—can be paid or unpaid. Unfortunately, while the Center-Based Provider Survey specifically asks if programs offer paid time off to participate in professional development, the workforce survey does not distinguish between paid or unpaid release time. This is an important distinction, as it is difficult for low-wage workers to take unpaid time off. For the center-based provider and workforce questionnaires, see Office of Planning, Research & Evaluation, "National Survey of Early Care and Education (NSECE), 2010-2015," available at http://www.acf.hhs.gov/programs/opre/research/project/national-survey-of-early-care-and-education-nsece-2010-2014 (last accessed July 2016).

75 Authors' calculations are based on data from U.S. Department of Health and Human Services, *National Survey of Early Care and Education, 2012*.

76 Suzanne W. Helburn and Carollee Howes, "Child Care Cost and Quality," *The Future of Children* 6 (2) (1996): 62–82, available at https://www.princeton.edu/future-ofchildren/publications/docs/06_02_03.pdf.

77 Katie Bugbee, "The Cost of Child Care – 2015 Care.com Report," available at https://www.care.com/a/the-cost-of-child-care-2015-carecom-report-20150727162954 (last accessed July 2016).

78 Hamm and Martin, "A New Vision for Child Care in the United States."

79 National Conference of State Legislators, "State Minimum Wages: 2016 Minimum Wage by State" (2016), available at http://www.ncsl.org/research/labor-and-employment/state-minimum-wage-chart.aspx.

80 Maryam Adamu and Lauren Hogan, "Point of Entry" (Washington: Center for American Progress, 2015), available at https://www.americanprogress.org/issues/criminal-justice/report/2015/10/08/122867/point-of-entry/; BUILD Initiative, "Addressing the Workforce Diversity Gap," available at http://www.buildinitiative.org/TheIssues/DiversityEquity/Workforce.aspx (last accessed July 2016); Center for Law and Social Policy, "Support a Diverse and Culturally Competent Workforce" (2009), available at http://www.clasp.org/resources-and-publications/publication-1/0467.pdf; National Association for the Education of Young Children, "Supporting Cultural Competence" (2012), available at https://www.naeyc.org/academy/files/academy/file/TrendBriefsSupportingCulturalCompetence.pdf.

81 Authors' calculations are based on data from U.S. Department of Health and Human Services, *National Survey of Early Care and Education, 2012*.

82 Eidah Hilo, "6 Barriers to Education People of Color Face," *FEM Magazine*, June 28, 2016, available at http://femmagazine.com/2015/05/28/6-barriers-to-education-people-of-color-face/.

83 Authors' calculations are based on data from the 2014 National Survey of Early Care and Education.

84 National Association for the Education of Young Children, "Early Childhood Educators: Advancing the Profession," available at https://www.naeyc.org/files/naeyc/Key%20Findings%20Presentation.NAEYC_.pdf (last accessed June 2016).

85 National Survey of Early Care and Education Project Team, "Number and Characteristics of Early Care and Education (ECE) Teachers and Caregivers"; Whitebook, Phillips, and Howes, "Worthy Work, STILL Unlivable Wages."

86 Office of Head Start, "History of Head Start," available at http://www.acf.hhs.gov/programs/ohs/about/history-of-head-start (last accessed July 2016).

87 Authors' calculations are based on data from U.S. Department of Health and Human Services, *National Survey of Early Care and Education, 2012*.

88 First Five Years Fund, "Essential for Children and Families: Voters Rate Early Childhood Education as a Top National Priority" (2015), available at http://growamericastronger.org/wp-content/uploads/2014/06/F_FFYF_ResearchOnePager_2015_100915.pdf?d2f9c6; Allie Grasgreen, "All Policy is Local: Pre-K on the campaign trail," Politico, September 29, 2014, available at http://www.politico.com/story/2014/09/all-policy-is-local-pre-k-on-the-campaign-trail-111420; Kris Perry, "Why 2015 Was a Benchmark Year for Early Childhood Education," The Hechinger Report, December 25, 2015, available at http://hechingerreport.org/why-2015-was-a-benchmark-year-for-early-childhood-education/.

89 U.S. Department of Education, "Programs: Preschool Development Grants," available at http://www2.ed.gov/programs/preschooldevelopmentgrants/index.html (last accessed July 2016).

90 Administration for Children and Families Early Childhood Development, "Early Head Start - Child Care Partnerships," available at http://www.acf.hhs.gov/programs/ecd/early-learning/ehs-cc-partnerships (last accessed June 2016).

91 Maryam Adamu and others, "Aligning and Investing in Infant and Toddler Programs" (Washington: Center for American Progress, 2014), available at https://www.americanprogress.org/issues/early-childhood/report/2014/10/15/98976/aligning-and-investing-in-infant-and-toddler-programs/.

92 Kashen and others, "Quality Jobs, Quality Child Care."

93 Fisher, "Women of Color and the Gender Wage Gap"; Deborah Ashton, "Does Race or Gender Matter More to Your Paycheck?", *Harvard Business Review*, June 10, 2014, available at https://hbr.org/2014/06/does-race-or-gender-matter-more-to-your-paycheck.

94 Timothy J. Bartik, *From Preschool to Prosperity: The Economic Payoff to Early Childhood Education* (Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 2014), available at http://research.upjohn.org/cgi/viewcontent.cgi?article=1246&context=up_press.

95 National Survey of Early Care and Education Project Team, "National Survey of Early Care and Education: Summary Data Collection and Sampling Methodology" (Washington: Office of Planning, Research & Evaluation, 2013), available at http://www.researchconnections.org/childcare/resources/26515/pdf.

96 Ibid.

97 Ibid.

98 National Survey of Early Care and Education Project Team, "NSECE Downloadable Presentation II: Data Files and Documentation" (Washington: Office of Planning, Research & Evaluation), available at http://www.researchconnections.org/childcare/resources/30571/pdf (last accessed June 2016).

99 Ibid.

100 NSECE Project Team, "Codebook for Workforce Quick Tabulation File"; NSECE Project Team, "Codebook for Center-based Provider Quick Tabulation File," available at (last accessed July 2016).

101 Ibid.

102 National Survey of Early Care and Education Project Team, "National Survey of Early Care and Education: Summary Data Collection and Sampling Methodology."

103 NSECE Project Team, "Codebook for Workforce Quick Tabulation File."

104 Sarah Jane Glynn, "Explaining the Gender Wage Gap" (Washington: Center for American Progress, 2014), available at https://www.americanprogress.org/issues/economy/report/2014/05/19/90039/explaining-the-gender-wage-gap/.

105 Respondents' reported or imputed hourly wage values of $50 or greater were considered to be outliers.

106 This is inclusive of all centers in the Center-based Provider Quick Tab file.

107 Ibid.

Our Mission

The Center for American Progress is an independent, nonpartisan policy institute that is dedicated to improving the lives of all Americans, through bold, progressive ideas, as well as strong leadership and concerted action. Our aim is not just to change the conversation, but to change the country.

Our Values

As progressives, we believe America should be a land of boundless opportunity, where people can climb the ladder of economic mobility. We believe we owe it to future generations to protect the planet and promote peace and shared global prosperity.

And we believe an effective government can earn the trust of the American people, champion the common good over narrow self-interest, and harness the strength of our diversity.

Our Approach

We develop new policy ideas, challenge the media to cover the issues that truly matter, and shape the national debate. With policy teams in major issue areas, American Progress can think creatively at the cross-section of traditional boundaries to develop ideas for policymakers that lead to real change. By employing an extensive communications and outreach effort that we adapt to a rapidly changing media landscape, we move our ideas aggressively in the national policy debate.

Center for American Progress

1333 H STREET, NW, 10TH FLOOR, WASHINGTON, DC 20005 • TEL: 202-682-1611 • FAX: 202-682-1867 • WWW.AMERICANPROGRESS.ORG