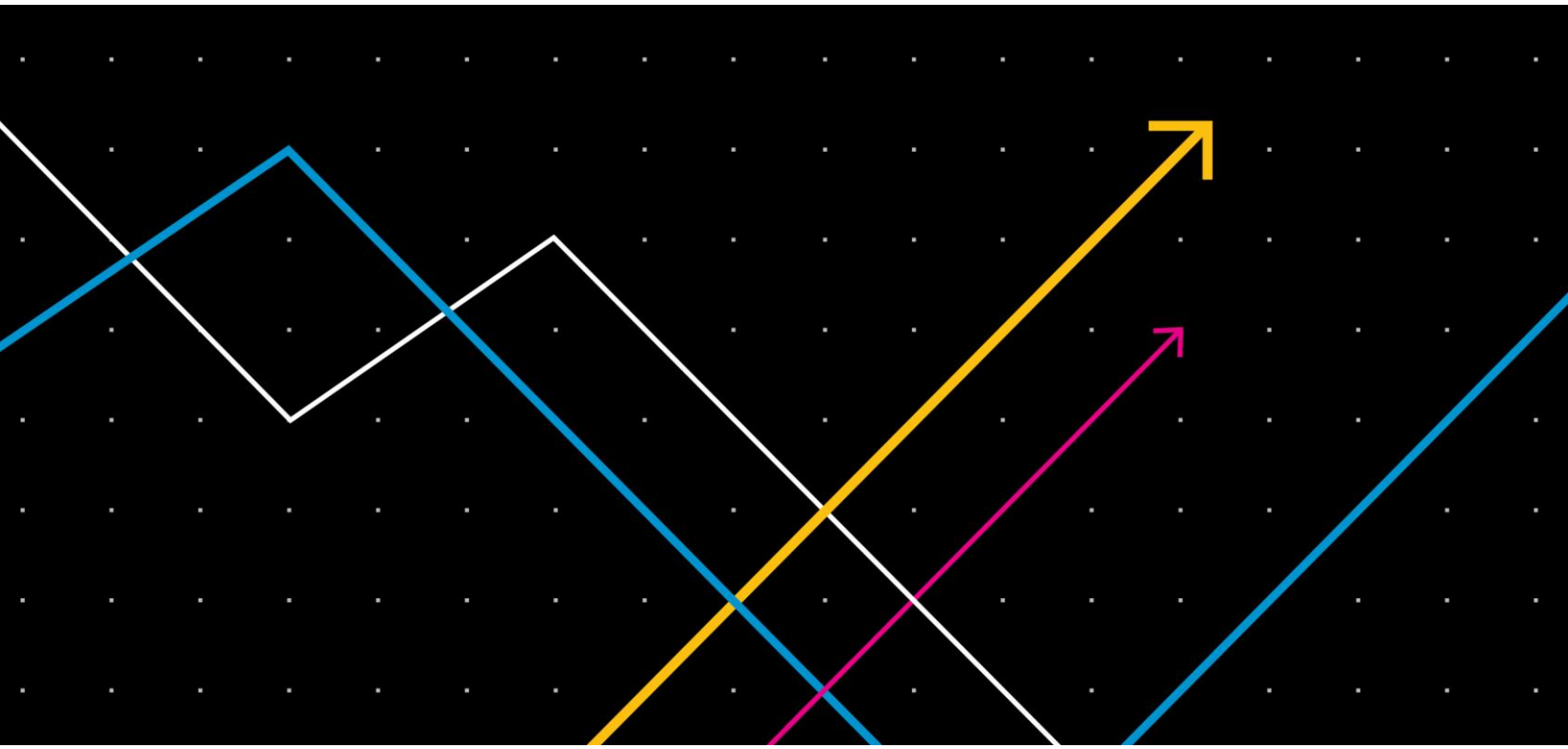

RESEARCH REPORT

# Assessing Quality across the Center-Based Early Care and Education Workforce

## Evidence from the National Survey of Early Care and Education

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# Executive Summary

**High-quality early care and education (ECE) supports children's healthy development and parents' ability to maintain work. Specifically, center-based care is associated with developmental gains for children. Public investments in center-based care have also been on the rise through the expansion of programs like pre-kindergarten and Head Start, which offer primarily classroom-based early education. While center-based care is a promising means through which to support child development, there is a great degree of variation in the quality of care offered within early childhood education centers. This study examines variation in the quality characteristics of early childhood education staff in child care centers and preschools using new, nationally representative data. First, the study describes the current landscape of early childhood education centers (ECE) and the types of families enrolled. Next, we provide an overview of the quality characteristics of the workforce in ECE centers across the country. Finally, analyses explore the extent to which the quality of center-based teaching staff varies by type of center and the characteristics of children and families enrolled.**

Study findings are based on the National Survey of Early Care and Education (NSECE), a nationally representative study of early care and education supply and demand conducted in 2012. We match data on ECE center-based classroom staff with data on the child care program in which they work using two NSECE data files. When weighted appropriately, our NSECE data on classroom-based instructional staff provide a representative portrait of all teachers, assistant teachers, and aides working at least five hours per week in center-based ECE programs serving children birth through age 5 (not yet in kindergarten) in the United States. We examine workforce quality using a series of indicators that proxy for ECE quality, given a lack of observational measures of teacher quality or child outcomes.

## Key Findings

The Current Landscape of Early Care and Education Centers. Data from the NSECE center-based provider survey include responses from center administrators on questions related to child care centers' schedules and rates, enrollment and revenues, staffing, and care provided. When weighted, the center-based survey provides a nationally representative portrait of these characteristics. Drawing on the NSECE survey of child care centers in the US, this study finds that:

- The large majority of centers receive at least some public funding.
- About half operate as private, non-profit organizations.
- A very small proportion of centers serve exclusively infants and toddlers (3 percent).
- Few centers provide child care during evenings, weekends, or overnight (9 percent).
- Less than half of centers offer families flexible scheduling and/or options to pay for a different number of hours week-to-week.
- In almost two-thirds of centers, English is the only language spoken by staff with children.

Exploring variation in the types of children and families enrolled, we find that more than half of centers serve children with special needs, and a majority provide care for at least one child whose home language is not English. At the same time, fewer than one in three centers report needing an interpreter to communicate with parents. On average, centers enroll 18 percent Hispanic children, 59 percent white children, 20 percent black children, and 12 percent children of some other race.[1]

Workforce Quality in Early Care and Education Centers Nationally. The NSECE workforce survey sought a response from one teaching staff member per participating early care and education center. The roles of those teaching staff are characterized as aides, assistant teachers, teachers, lead teachers, and other. Nearly half of respondents indicated they held the title of lead teacher. Overall, the data on ECE center-based classroom staff reveal teaching staff in the US are highly professionalized. Nationally:

- The majority of staff members have five or more years of ECE experience, participated in at least one professional development activity in the past year, and attended a professional workshop in the past year.
- One-third of ECE teaching staff in the US have a bachelor's degree or higher.
- One in three staff members report taking an ECE-related college course in the past year.
- Nearly half of teaching staff consider their work a personal calling; more than one-quarter indicate their work is a career, profession, or step toward a related career.

Variation in Workforce Quality by Type of Center. Analyses of NSECE data on staff matched to the centers in which they work reveal systematic differences in ECE workforce quality based on the type of

[1] Figures total more than 100 percent in the NSECE Center-based Provider Quick Tabulation file.

funding a center receives, the type of organizational auspice in which the center operates, and the center's level of flexibility in meeting families' needs.

**Staff in publicly funded centers, particularly centers offering Head Start, meet more quality benchmarks than staff in centers funded only by private tuition.**

- In centers receiving any Head Start dollars, staff are less likely to have very low levels of education—a high school degree or less—and more likely to have an Associate's degree.
- Workforce members in centers receiving any public funding (including subsidy, Head Start, or state pre-K funds) are much more likely to view their work as a career, profession, or step toward a related career.
- Staff in publicly funded centers engage in ongoing professional development at higher rates than those in tuition-only centers, with staff in Head Start-funded centers reporting the highest rates of engagement.

**Nonprofit centers show higher workforce quality than for-profit centers.**

- Teaching staff in nonprofit and government-run centers are older, more experienced, and more highly educated.
- Those working in nonprofit, government-run, and other centers engage in professional development at higher rates and are more likely to be members of professional organizations.

**In centers with more flexibility for families, staff meet fewer quality benchmarks.**

- Staff working in centers permitting flexible schedules or flexible payment plans for parents are less experienced, have less formal education, and are somewhat less likely to be members of professional organizations.
- Staff in centers open during any nonstandard hours (after 7pm, on weekends, and/or overnight) have much lower levels of formal education and participate in professional organizations at lower rates.

Variation in Workforce Quality by the Characteristics of Children and Families Enrolled. Workforce quality varies substantially by the ages of children enrolled in ECE centers and according to whether a center serves children qualifying for special education services.

**Workforce quality is highest in centers that serve only preschoolers and lowest in those serving only infants and toddlers.**

- Staff serving only preschoolers are older, more experienced caring for children, and more highly educated (20 percentage points more likely to have a BA or higher and half as likely to have a high school diploma or less) than staff in mixed aged centers.
- Staff in centers serving only infants and toddlers are half as likely as those in mixed-age centers to hold a BA or higher.
- In centers serving only preschoolers, teaching staff are significantly more likely to participate in professional development activities and have higher rates of membership in professional organizations.

**Teaching staff in centers that serve any children with Individualized Education Plans (IEPs) or Individualized Family Service Plans (IFSP) meet more quality benchmarks than staff in other centers.**

- Staff in centers serving children with disabilities have more experience, higher levels of formal education, and more agreement that children's play activities should be organized by teachers.
- These same workforce members have higher rates of enrollment in professional organizations and higher likelihoods of participating in nearly every form of professional development.

Disparities in workforce quality by home-language of families and children served along with by race and ethnicity of children enrolled also emerge but are less consistent. Some evidence suggests that staff in centers with children or families who do not speak English as their primary language meet more quality benchmarks. Results also show workforce quality is higher among centers with relatively higher shares of Hispanic enrollment. However, staff in programs with high shares of black students met more quality indicators in some domains yet showed lower quality in others.

# Conclusion

We find the highest quality center-based teaching staff are in programs receiving funding from Head Start and, to a lesser extent, state pre-K; serving preschoolers only; operating during traditional hours or with fixed schedules/payments; and providing special education services. For many families—those who are low-income and relying on publicly funded programs, those who have children with special needs, and those who speak languages other than English at home—relying on center-based child care

does not appear to require a trade-off in care quality. Notably, however, parents with very young children and those with nonstandard or variable work schedules are often less able to access high-quality center-based care than other parents. Such variation in the quality of the center-based workforce should be considered in light of efforts to advance ECE quality through policy reforms. While growing public investments in programs like Head Start and state pre-K are supported by findings from our analyses of the NSECE, our results call for a renewed focus on the provision of early childhood education for infants and toddlers and families working variable schedules, among others.

# Introduction

High-quality early care and education experiences are critical for children's growth and development, families' ability to work, and the future health of society. These experiences are more likely to be fostered in early care and education centers than home-based care (Adams, Zaslow, and Tout 2007; Bassok, Fitzpatrick, Greenberg, and Loeb 2016; Bernal and Keane 2011; Dowsett, Huston, Imes, and Gennetian 2008; Loeb, Bridges, Bassok, Fuller, and Rumberger 2007; Magnuson, Ruhm, and Waldfogel 2007; Wrigley and Dreby 2005). Yet, even within centers, there is a high degree of variation in quality (Bassok et al. 2016; Gormley, Phillips, Adelstein, and Shaw 2010; Henry, Gordon, and Rickman 2006; Wong, Cook, Barnett, and Jung 2008; Zhai, Waldfogel, and Brooks-Gunn 2013). This study assesses variation in the quality of the early care and education workforce across a variety of center characteristics. Specifically, we ask: does quality vary systematically by program type, funding stream, and structural characteristics of centers? Does quality vary systematically by the characteristics of children and families served? To what extent do trade-offs exist between quality and access?

We address these questions using the most recent and comprehensive data available: the National Survey of Early Care and Education (NSECE). The NSECE includes information on 8,265 early care and education centers and 5,556 center-based teaching staff surveyed in 2012. We leverage the center-based provider and workforce quick tabulation files to provide a first look at the current landscape of quality available to families in all 50 states and Washington, DC. Analyses proceed in four parts. The first and second parts offer a national portrait of early care and education centers, including all centers in the center-based provider file and a subset of centers with instructional staff in the accompanying workforce file, and a nationally representative description of the center-based early care and education workforce. The third part focuses on workforce quality, illuminating differences across a wide variety of center types. The fourth part further probes these differences by investigating the workforce quality experienced by different types of children and families, including those defined by race/ethnicity, home language, and disability status.

This study comes at a critical time for the public provision of center-based early care and education (ECE). Public investment in centers has increased dramatically in recent years, totaling $14.7 billion in pre-kindergarten and Head Start, alone, in 2015 (Barnett et al. 2017). In addition, the 2014 reauthorization of the Child Care and Development Fund both increases investments in child care subsidies and expands a growing focus on the quality of subsidized child care. Additional resources come from Early Head Start-Child Care Partnerships, Preschool Development and Expansion Grants, and Race to the Top—Early Learning Challenge competitions—all of which are partially or completely

dedicated to center-based care. Accordingly, we conclude by considering the implications of observed quality variation for research, policy, and practice.

## Research Questions

Building on existing research and newly available, nationally representative data in the National Survey of Early Care and Education, this study addresses the following research questions:

1. What does the current landscape of early care and education centers look like?
2. What does workforce quality in early care and education centers look like?
3. How does workforce quality vary by center characteristics?
4. How does workforce quality vary by the characteristics of children and families using centers?

Here, we focus on quality among the early care and education workforce—known as "one of the most important channels for improving the quality of early care and education" (Allen and Kelly 2015), and the channel most richly detailed in the NSECE.

## Data and Methods

The National Survey of Early Care and Education is a nationally representative study of early care and education supply and demand conducted in 2012 under the direction of the Administration for Children and Families Office of Planning, Research and Evaluation. This report draws on the Center-based and Workforce Quick Tabulation files—the first NSECE files released to the public in late 2014. These files include 7,770 early care and education centers and 4,823 classroom-based teaching staff—a subsample of the 8,265 centers and 5,556 staff responding to the NSECE overall.[2] When weighted using the appropriate sampling weights, however, the Quick Tabulation files represent 129,277 centers and 999,608 instructional staff nationwide. Together, these files provide a representative portrait of all teachers, assistant teachers, and aides working at least five hours per week in center-based early care

[2] The Quick Tabulation files are censored in several ways, including (1) omission of centers and workforce respondents to limit identifiability and protect confidentiality, (2) omission of some variables collected in the full National Survey of Early Care and Education, and (3) top- and bottom-coding of included variables. Sampling information and survey weights help correct for these types of censoring and allow us to produce nationally representative estimates of center and workforce characteristics.

and education programs that serve children birth through age 5, not yet in kindergarten, in the United States.

Our analysis focuses on a sample of 4,811 classroom-based instructional staff from the Workforce Quick Tabulation file linked to data from the Center-based Quick Tabulation file on each individual's respective ECE center. The Center-based Quick Tabulation data file draws on survey responses from center administrators and includes a subset of policy-relevant variables with information on child care centers' schedules and rates, enrollment and revenues, staffing, and care provided. Similarly, the Workforce Quick Tabulation data file draws on a survey of instructional staff members working in centers included in the Center-based file. The Workforce file contains variables on the personal characteristics, work experiences, professional development activities, and opinions and attitudes toward caregiving of instructional staff members in ECE centers serving children from birth to age 5. Additional information on sampling, response rates, and the linkage of Center-based and Workforce files is provided in Appendix A.

We conduct descriptive analyses to examine (1) the national landscape of ECE centers, (2) quality characteristics of classroom-based instructional staff in those ECE centers, (3) correlations between center characteristics and workforce quality, and (4) differences in workforce quality according to the types of children and families enrolled. For all analyses, sampling weights allow us to generate estimates that reflect the full population of teachers, assistant teachers, and aides in the US working at least five hours a week in center-based ECE programs with children birth through age 5, not yet in kindergarten. Thus, data are representative of the workforce as a whole, but data are not representative of particular types of teaching staff. In addition, we use design-corrected standard errors in all significance testing.

## Key Indicators

Table 1 defines key early care and education center characteristics drawn from the Center-based Quick Tabulation file, while Table 2 presents measures of workforce quality drawn from the Workforce Quick Tabulation file. In a few cases, we use variables as they appeared in the NSECE data files; in most cases, however, we construct key indicators through an iterative process based on existing research and statistical summaries of raw information in the NSECE. For example, to develop constructs of workforce quality, we drew on a variety of indicators that have been found in the literature to predict observed quality of care. Importantly, no observational measures or measures of child outcomes are included in the NSECE. As a result, we view each key variable summarized below as a quality *proxy* and reason that,

while no single variable connotes high quality early care and education, higher values on several proxy variables are likely to be associated with higher quality care.

## Limitations

In addition to our use of quality proxies, this study is subject to several limitations. First, we leverage the NSECE Quick Tabulation files in an effort to provide timely and current analyses of the quality of the center-based early care and education workforce. However, these files are censored in ways that may limit the extent to which they are nationally representative, including top- and bottom-coding of included variables and the omission of some center-based providers and workforce members to protect confidentiality. Although we employ survey weights and sampling characteristics to correct for these limitations, we recommend the replication of our analyses using more detailed Public- and Restricted-Use files released since the start of this project.

Second, we analyze associations between center characteristics and workforce quality but acknowledge the limitations that stem from each center contributing only one respondent to the workforce survey. While the NSECE aims to capture the full set of teaching staff in centers, including teachers, assistant teachers, and aides, at random (contingent on working at least five hours per week in centers that serve children birth through age 5, not yet in kindergarten), we are concerned that the role of the staff member who responded may be correlated with center type. Accordingly, we analyze the distribution of staff roles by center characteristics and account for observed differences throughout our discussion of findings.

Third, our findings represent the supply of early care and education centers in 2012 but do not capture the relationship between this supply and demand. We are unable to characterize issues of access, including the use and length of waiting lists, in our analyses. Further, we are unable to account for locally available, home-based care despite the important interplay between centers and homes. These limitations may be particularly influential with respect to our fourth research question, in which we examine the relationship between workforce quality and the characteristics of children and families enrolled in centers (but not the characteristics of children and families who would like to enroll in centers given sufficient capacity). We return to this limitation at the conclusion of this study.

Finally, we note that this study provides a national perspective while acknowledging that the reality in specific communities is likely to vary based on state standards and other community characteristics.

TABLE 1

**Key Indicators of Early Care and Education Center Characteristics**

| Category | Characteristics | Definition |
|---|---|---|
| Funding | ▪ Tuition-only funding | Center's *only* source of revenue is from tuition/fees paid by parents |
| | ▪ Any subsidy funding | Center with any children funded by dollars from child care subsidy programs (e.g., CCDF, TANF, vouchers/certificates, state contracts) |
| | ▪ Any Head Start funding | Center with any children funded by dollars from Head Start |
| | ▪ Any state pre-K funding | Center with any children funded by state pre-kindergarten |
| | ▪ Any local government funding | Center with any children funded by dollars from the local government (e.g., pre-K funding from local school board or local agency, grants from city or county government) |
| Auspice | ▪ For-profit | Includes both independent owner-proprietor centers and centers that are part of larger for-profit franchises/chains |
| | ▪ Nonprofit independent | Not-for-profit independent entities whose sole purpose is delivering early care and education |
| | ▪ Nonprofit-sponsored | Not-for-profit individual centers run or sponsored by nonprofit entities that also have other social service or faith-based missions, or multi-activity enterprises sponsored by nonprofit entities such as universities or community organizations (e.g., YMCA or the Boys and Girls Clubs of America) |
| | ▪ Run by government | Commonly includes facilities operated by school districts, state pre-K programs, or agencies running Head Start programs (both sponsored and independent government-run programs) |
| | ▪ Other | Centers reporting "other," none of the above |
| Center flexibility | ▪ Offers flexible schedules and/or payments | Center permits parents to (a) use services on schedules that vary from week to week, and/or b) pay for and use varying numbers of hours of care each week |
| | ▪ Open during any nonstandard hours | Center is open for care during evenings (after 7pm), weekends, and/or overnight |
| Language accommodations | ▪ Language spoken with children in center | Staff speaks (1) English only, (2) any Spanish (English and Spanish or Spanish only), or (3) other, when working with children in the center |
| Ages of children served | ▪ Enrollment across age groups:<br>» Both infants/ toddlers and preschoolers<br>» Only preschoolers<br>» Only infants/ toddlers | Three mutually exclusive categories capture whether a center serves: children ages birth to 5 years old (both infants/toddlers and preschoolers); only children 3 through 5 years old (preschoolers only); or children birth to less than 3 years old (infants/toddlers only) |
| Enrollment by race/ethnicity | ▪ Hispanic enrollment: low, medium, high<br>▪ Black enrollment: low, medium high<br>▪ White enrollment: low, medium, high<br>▪ Other race enrollment: low, medium, high | For each racial/ethnic group, centers are classified as having high enrollment if they are in the top quartile of all centers based on their share of enrolled children of that group. Centers classified as medium fall in the middle two quartiles, and those classified as low are in the bottom quartile. (Weights are used to obtain the quartiles across the nationally representative NSECE sample. See Figure 1 for the breakpoints of each of these categories.) |

| Category | Characteristics | Definition |
|---|---|---|
| Language needs | ▪ Serves only children speaking English at home | Center serves zero children speaking a non-English language at home |
| | ▪ Share of children speaking a non-English language | Of centers with any children speaking a non-English language at home, centers classified as high are in the top quartile of all centers based on their share of enrolled children who speak a non-English language at home. Centers classified as medium fall in the middle two quartiles, and those classified as low are in the bottom quartile. (Weights are used to obtain the quartiles across the nationally representative NSECE sample.) |
| | ▪ Any parents requiring an interpreter to communicate | Any parents of currently enrolled children who require the help of an interpreter or a child to speak with teachers |
| Enrollment by special education status | ▪ Any children with an IEP/ISFP | Center serves any children that have an Individualized Education Plan (IEP) or Individualized Family Services Plan (IFSP) |

**Source:** NSECE codebooks and authors' explanation of variable transformation.

TABLE 2

**Key Indicators of Early Care and Education Workforce Quality**

| Category | Quality constructs | Definition |
|---|---|---|
| Age | ▪ Age of respondent:<br>» 25 years old or younger<br>» 26–50 years old<br>» 51+ years old | Calculated based on respondent's reported birth year (reported in censored categories in the NSECE) |
| Years of work experience | ▪ Years of experience caring for young children:<br>» 5 or less<br>» 5–25<br>» 25 or more | Categories based on self-reported years of paid experience working with children under 13 years |
| Education | ▪ Highest level of education completed:<br>» High school or less<br>» Some college<br>» Associate's degree<br>» Bachelor's degree or higher | High school or less is less than high school, GED or high school equivalency, or high school graduate. Some college is some college credit but no degree. Associate's degree is associate's degree (AA, AS). Bachelor's degree or higher is bachelor's degree (BA, BS, AB) or graduate or professional degree. |
| Motivation | ▪ Main reason for working with young children:<br>» Career/profession/step toward related career<br>» Personal calling<br>» Job with a paycheck/job while own children are young<br>» Way to help children<br>» Way to help parents<br>» Other | Career/profession/step toward related career captures two responses: "It is my career or profession" and "It is a step towards a related career." Job with a paycheck/job while own children are young includes "It is a job with a paycheck" and "It is work I can do while my own children are young." All other responses were selected directly by workforce respondents. |
| Beliefs | ▪ Agreement with: young children do best when teachers actively organize children's play activities:<br>» Agree or strongly agree<br>» Neither agree nor disagree<br>» Disagree or strongly disagree | Three-category variable created by collapsing responses from a five-item scale ranging from "strongly agree" to "strongly disagree." Agreement is a proxy for higher quality teaching (e.g., Rogers and Sawyers 2002; Feeney, Galper, and Seefeldt 2009). |
| Work environment | ▪ Any agree: team work is encouraged while working in this program | Binary variable captures whether a respondent "strongly agrees" or "agrees" that team work is encouraged while working in their program. |
| | ▪ Any agree: my coworkers and I are treated with respect on a daily basis | Binary variable captures whether a respondent "strongly agrees" or "agrees" with the statement "my coworkers and I are treated with respect on a day-to-day basis." |
| Professional development (PD) | ▪ Member of a professional organization focused on caring for children | Membership in such organizations as the National Association for the Education of Young Children, the National Family Child Care Association, the National Institute on Out of School Time, a religiously identified child care organization, or similar organization. |
| | ▪ Respondent participated in one or more PD activities in the past 12 months | Binary indicator captures whether respondent participated in at least one PD activity in the past 12 months (see below for list of five possible activities). |

| Category | Quality constructs | Definition |
|---|---|---|
| | ▪ In the past 12 months, respondent:<br>» Received coaching<br>» Took a course<br>» Attended a professional meeting<br>» Visited classrooms in other programs<br>» Attended a professional workshop | Five binary indicators capture whether in the past 12 months a workforce respondent: participated in coaching, mentoring or ongoing consultation with a specialist; enrolled in a course at a community college or four-year college/university relevant to his/her work with young children; attended a meeting of a professional organization; made visits to classrooms in other programs as part of a professional development activity; or participated in a workshop (offered by a professional association, resource and referral network, etc.). |
| | ▪ Main topic of most recent professional development activity:<br>» Cognitive development<br>» Children's social or emotional growth<br>» Serving children with special needs<br>» Working with children who speak more than one language<br>» Specific curriculum or teaching methods/technology<br>» Child/classroom monitoring and assessment<br>» Health and safety<br>» Other | Topic of respondents' most recent professional development activity related to improving or gaining skills in working with children selected from 10 topics on the NSECE, with an additional 10 topics added during post-coding of "other" responses. Of these 20 responses, 7 are included in this analysis with all remaining topics grouped under "other."<br>The 7 topics included are: cognitive development, including early reading or math; helping children's social or emotional growth, including how to behave well; serving children with special physical, emotional or behavioral needs; working with children who speak more than one language; specific curriculum or teaching methods/technology; child/classroom monitoring and assessment (added topic); and health and safety in the classroom. |
| | ▪ Intensity of supervision/performance review received:<br>» Neither supervision nor review<br>» Both supervision and review<br>» Supervision only or review only | Categories reflect (1) whether respondent receives a formal review and feedback on performance at least once a year, and (2) whether s/he discusses how to improve skills to help children learn several times a year, once a month, or a few times a month. Respondents that report having such discussions once a year or never are coded as *not* receiving supervision. |

**Source:** NSECE codebooks and authors' explanation of variable transformation.

# Findings

We present findings from our analyses of the NSECE in four sections. The first two sections provide an overview of the national early care and education landscape in terms of center characteristics and indicators of workforce quality. Together, they address our first and second research questions, above. The third section presents variation in workforce quality across a number of center characteristics, including funding streams utilized, levels of flexibility for families, and staff language capabilities. The

fourth section presents variations in workforce quality by the characteristics of children and families enrolled, including children's ages, race and ethnicity, and disability status.

## What Does the Current Landscape of Early Care and Education Centers Look Like?

The NSECE defines centers as those providing services at a single location under the direction of a single organization to at least one child, birth through age 5 and not yet in kindergarten. Analyses of the center-based file (see Appendix B Table 1) reveal child care centers are housed in a wide variety of program locations, including public schools (28 percent of all centers), independent structures (in which providers were the sole occupants; 23 percent), religious buildings (17 percent), private schools (12 percent), commercial structures (10 percent), and other building types such as universities, work places, and community centers. Location is not the same as auspice; for example, a religious institution may allow a non-religious entity to use its space.

At the time of the NSECE survey (2012), the majority of early care and education centers relied on sources of funding other than private tuition, with only 14 percent indicating parent tuition and fees as their only income source. About half were nonprofit organizations and almost one-third were for profit organizations. Very few centers served infants and toddlers only (3 percent), but 44 percent served only children ages three to five years.

Centers appeared uneven in their accommodation of family needs. Very few centers (9 percent) offered care during any nonstandard hours (evenings after 7:00pm, overnight, or weekends). Almost half of centers did permit some flexible scheduling and/or options to pay for different hours week-to-week (45 percent). More than half of centers were serving children with special needs who had either an individual education plan (IEP) or individual family service plan (IFSP) to address those needs. In almost two-thirds of centers (62 percent), the only language spoken with children was English; just over one in five centers had staff who spoke some Spanish with the children, and 9 percent indicated that staff spoke other languages.

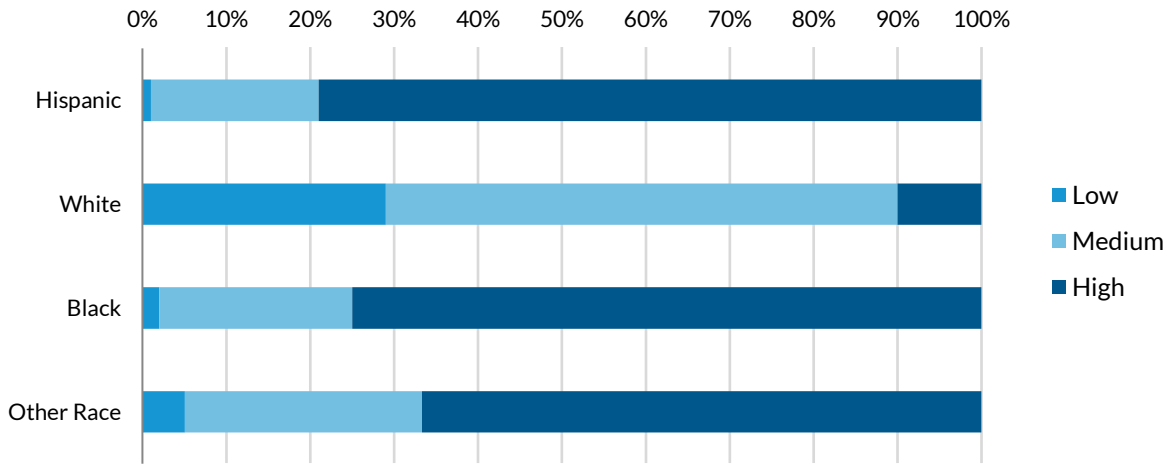
Despite the fact that only English was spoken in most centers, the children and families attending presented a more diverse picture. Fewer than one in three centers served exclusively children whose home language was English. At the same time, just under one-third of centers reported serving parents who require an interpreter to communicate. On average, centers enrolled 18 percent Hispanic children, 59 percent white children, 20 percent black children, and 12 percent children of some other race.[3]

[3] Figures total more than 100 percent in the NSECE Center-based Provider Quick Tabulation file.

Dividing centers into quartiles[4] by these racial/ethnic categories, we find that centers with medium Hispanic enrollment (e.g., centers that fall in neither the top 25 percent for highest share of Hispanic students nor the bottom 25 percent for lowest share of Hispanic enrollment) are those where Hispanic children constitute between 1 and 21 percent of total enrollment; centers with medium white enrollment are those where white children constitute between 29 and 90 percent of total enrollment; centers with medium black enrollment are those where black children constitute between 2 and 25 percent of total enrollment; and centers with medium other race enrollment are those where other race children constitute between 2 and 14 percent of total enrollment. (Our analyses are limited to these four racial and ethnic categories by the data available.)

FIGURE 1

**Distribution of Center by Race/Ethnicity of Children Enrolled**




**Source:** Data from the 2012 National Survey of Early Care and Education.
**Note:** "High" enrollment identifies the top 25% of programs with the highest shares of children of each specific race/ethnicity enrolled.

The analyses in the remainder of the paper leverage a merged dataset that combines the Center-based Quick Tabulation and Workforce Quick Tabulation files. This merged dataset represents fewer early care and education centers than does the Center-based file because teaching staff from all centers did not respond to the workforce portion of the survey. A comparison of the merged dataset with the

[4] By the design of our analysis, roughly one-quarter of centers qualify as low enrollment in each of these racial/ethnic categories, while one-half qualify as medium enrollment and the remaining one-quarter qualify as high enrollment. Because the population is not evenly distributed across categories, however, the breaks between low, medium, and high categories vary across racial/ethnic groups.

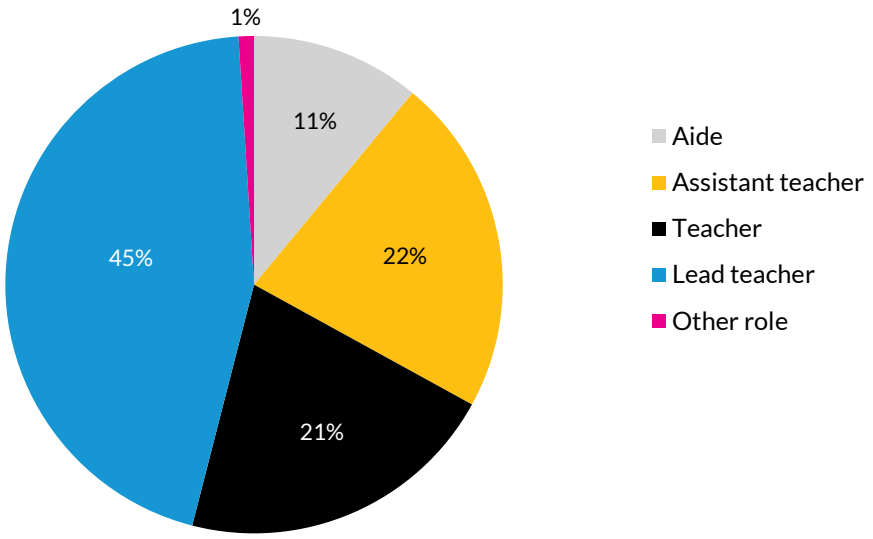
original center file, however, indicates that the two datasets comparably represent the national ECE center landscape. The comparison is presented in Table 1 in Appendix B, which notes statistically significant differences between the two datafiles. The few detectable differences are no more than 2 or 3 percentage points, which is quite small in real terms. This gives us confidence that analyses using the Workforce file reflect workforce quality in all early care and education centers nationwide.

## What Does Workforce Quality in Early Care and Education Centers Look Like?

The NSECE workforce survey sought a response from one teaching staff member per participating early care and education center. The roles of those teaching staff are characterized as aides, assistant teachers, teachers, lead teachers, and other. Nearly half of respondents indicated they held the title of Lead Teacher as shown in Figure 2.

FIGURE 2

**Professional Roles of Respondents to the NSECE Workforce Survey**




**Source:** Data from the 2012 National Survey of Early Care and Education.

Center-based teaching staff are increasingly professionalized (Bassok, Fitzpatrick, Loeb, and Paglayan 2013), with results from the NSECE confirming this trend (see Table 2 in Appendix B). Nationally, four-fifths of teaching staff have five or more years of experience caring for children from

birth to age 13. More than one-third have attained a bachelor's degree or more, while fewer than one in five have attained a high school diploma or less. The majority (93 percent) indicated that they had participated in one or more professional development (PD) activities during the 12 months preceding the survey, with one-third indicating that they had taken a course and 85 percent indicating they had attended a workshop. Of those participating in professional development activities, about one in five indicated that their last activity focused on helping children's social or emotional growth, while another one in five indicated classroom health and safety as the topic. Two-thirds indicated they had received both supervision and a performance review in the last year.

Teaching staff included in the survey indicated various motivations for engaging in their work. The largest proportion (44 percent) indicated it as a personal calling, and only 5 percent indicated that it was simply a job with pay or job for while their own children were young. More than one-quarter indicated that teaching is their career, profession, or a step toward a related career. When asked to respond to the statement "Is it best when teachers actively organize children's play activities?", more than one-third agreed with that statement (35 percent), but the largest proportion (41 percent) neither agreed nor disagreed. The majority of workforce respondents agreed that teamwork is encouraged in their workplace (84 percent) and that they and their coworkers are regularly treated with respect (90 percent).

Next, we compare these workforce characteristics across center types defined by the indicators in Table 1. In doing so, we aim to illuminate how the quality of the center-based early care and education workforce varies by type of centers, and therefore how access to quality may vary for parents and children with different types of needs, preferences, and available early care and education options. We also conduct supplementary analyses to explore systematic variation in the type of teaching staff member who responded to the survey by center type. In each of the following analytic discussions, we discuss significant findings from these analyses and reflect on how any differences in the type of teaching staff person included in the survey across centers types are likely to influence the interpretation of the findings. (Results from supplementary analyses are not presented but are available upon request.)

## How Does Workforce Quality Vary by Center Characteristics?

Workforce quality varies substantially by the type of funding an early care and education center receives, the type of organizational auspice in which the center operates, and indicators of center flexibility to meet families' needs.

## VARIATION BY TYPE OF FUNDING

Early care and education centers receive funding from a variety of sources, ranging from parent-paid tuition and tuition subsidies to the federal Head Start program to state and local pre-kindergarten initiatives. This analysis uses a subset of the types of funding collected by the NSECE, focusing on the largest and most policy-relevant funding sources. Specifically, we compare centers that receive *any subsidy*, *any Head Start*, *any state pre-K*, and *any local government funds* to those that operate using parent-paid tuition only. A single center may receive funding from multiple sources. Each funding source carries with it a set of associated regulations and requirements, and some sources may cover actual per child costs better than others. As a result, characteristics of workforce quality may vary according to the types of funding centers receive.

Overall, the NSECE revealed relatively few differences in staff age and experience by funding source, but there were differences by education (see Table 3). Staff in centers receiving any Head Start funding were better educated than staff in centers funded only by tuition: they were 9 percentage points less likely to have a high school degree or less and 12 percentage points more likely to have an Associate's degree. Staff levels of formal education were roughly comparable between centers receiving tuition only, any state pre-K funding, and any local government funding. However, compared with staff in centers funded only by private tuition, staff in centers receiving child care subsidy dollars were more likely to have lower levels of education (with lower shares of staff reporting a BA or higher, and higher shares having completed some college). Staff in centers receiving subsidy funds also were younger and had less experience (10 percentage points more likely to have five years or less of experience).

Though we found no differences in staff beliefs about teaching or the work environment, staff did appear to differ in their motivations for working with young children (see Table 3). Staff members in centers receiving any subsidy, Head Start, or state pre-K funds were much more likely to view their work as a career, profession, or step toward a related career than staff in tuition-only centers. Staff in centers receiving any Head Start, state pre-K, or local government funding were less likely to view their work as a job for pay or a job to do while their own children were young. Together, these findings suggest that staff in publicly funded centers, particularly centers offering Head Start or state pre-K, are more professionalized than staff in centers funded by private tuition, only.

TABLE 3

**Center-Based Early Care and Education Workforce Quality by Funding Stream**

| | Private tuition only (ref) | Child care subsidy | Head Start | State pre-K | Local gov. |
|---|---|---|---|---|---|
| **Age of Respondent** | | | | | |
| 25 years old or younger | 13% | 21% ** | 9% | 13% | 14% |
| 26–50 years old | 60% | 58% | 61% | 64% | 58% |
| 51+ years old | 26% | 20% | 29% | 24% | 27% |
| **Years of Experience Caring for Children Ages 0–13** | | | | | |
| 5 years or less | 18% | 28% ** | 20% | 19% | 18% |
| 5–25 years | 69% | 63% † | 66% | 72% | 73% |
| 25 years or more | 13% | 9% | 13% | 9% | 9% |
| **Highest Level of Education Completed** | | | | | |
| High school or less | 24% | 23% | 13% ** | 17% | 17% |
| Some college | 26% | 34% ** | 23% | 24% | 28% |
| Associate degree | 16% | 17% | 28% ** | 19% | 16% |
| Bachelor's degree or higher | 33% | 26% * | 36% | 40% | 39% |
| **Motivation** | | | | | |
| *Main reason for working with young children* | | | | | |
| Career/profession/step toward related career | 22% | 29% * | 31% † | 30% * | 29% |
| Personal calling | 45% | 42% | 41% | 41% | 48% |
| Job with a payment/job while own children are young | 8% | 5% | 2% ** | 3% * | 3% * |
| Way to help children | 21% | 21% | 24% | 23% | 18% |
| Way to help parents | 2% | 2% | 1% | 1% | 0% |
| Other | 1% | 2% | 1% | 2% | 1% |
| **Beliefs** | | | | | |
| *Agreement with: Best when teachers actively organize children's play activities* | | | | | |
| Agree or strongly agree | 36% | 31% | 38% | 36% | 33% |
| Neither agree nor disagree | 22% | 25% | 27% | 26% | 24% |
| Disagree or strongly disagree | 41% | 45% | 35% | 39% | 43% |
| **Work Environment** | | | | | |
| Agree or strongly agree: teamwork is encouraged | 90% | 91% | 92% | 92% | 91% |
| Agree or strongly agree: my coworkers and I are treated with respect on a daily basis | 82% | 84% | 81% | 86% | 85% |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001.

Similarly, staff in publicly funded centers met higher quality benchmarks on nearly every indicator of engagement in ongoing professional development activities (see Table 4). Compared to staff in tuition-only centers, those in centers receiving any Head Start funding were *twice* as likely, and those in centers receiving state pre-K or local government funding were 8 percentage points more likely, to belong to a professional organization focused on caring for children. Staff in Head Start-funded centers were more likely to participate in professional development activities, including receiving coaching, taking courses, visiting classrooms in other programs, and attending professional workshops. Staff in centers receiving any state pre-K, local government, or subsidy funds engaged in PD activities at higher

rates than tuition-only centers but at lower rates than Head Start-funded centers. PD activities taken up by staff in publicly funded centers were more likely to include supporting social and emotional development, working with children who speak more than one language, and monitoring and assessment. Staff in subsidy-funded centers were less likely than those in tuition-only centers to engage in PD around cognitive development and more likely to focus on health and safety. However, staff in all publicly funded centers were substantially more likely than those in tuition-only centers to receive both supervision and performance review—in the case of Head Start-receiving centers, by more than 20 percentage points.

TABLE 4

**Center-Based Early Care and Education Workforce Quality by Funding Stream (cont'd)**

| | Private tuition only (ref) | Child care subsidy | Head Start | State pre-K | Local gov. |
|---|---|---|---|---|---|
| **Membership** | | | | | |
| Is a member of a professional organization focused on caring for children | 21% | 24% | 41% *** | 29% * | 29% † |
| **Participation in Professional Development Activities** | | | | | |
| *Participated in one or more PD activities in last 12 mos:* | 92% | 91% | 98% ** | 94% | 94% |
| Received coaching | 25% | 25% | 42% *** | 36% ** | 39% ** |
| Took a course | 25% | 36% ** | 46% *** | 38% ** | 39% ** |
| Attended a professional meeting | 33% | 31% | 37% | 33% | 38% |
| Visited classrooms in other programs | 44% | 43% | 53% † | 53% * | 51% |
| Attended a professional workshop | 83% | 86% | 92% ** | 88% † | 87% |
| **Main Topic of Most Recent Professional Development Activity** | | | | | |
| Cognitive development, including early reading or math | 11% | 7% † | 13% | 9% | 9% |
| Helping children's social or emotional growth, including how to behave well | 15% | 22% * | 20% | 21% † | 25% * |
| Serving children with special physical, emotional or behavioral needs | 8% | 5% † | 8% | 7% | 8% |
| Working with children who speak more than one language | 0% | 0% | 3% * | 2% * | 2% |
| Specific curriculum or teaching methods/technology | 11% | 9% | 6% | 12% | 12% |
| Child/classroom monitoring and assessment | 0% | 2% ** | 5% ** | 3% * | 1% * |
| Classroom health and safety | 20% | 25% * | 18% | 17% | 14% |
| Other (e.g., physical development & health, how to work with families, planning activities to meet whole class' needs) | 34% | 31% | 27% | 29% | 29% |
| **Supervision and Performance Review** | | | | | |
| *Intensity of supervision/performance review provided* | | | | | |
| Received both supervision & review | 56% | 68% * | 78% *** | 70% ** | 70% ** |
| Either supervision >1x/year OR review | 36% | 26% † | 19% *** | 24% ** | 24% * |
| Received neither | 8% | 6% | 3% * | 6% | 6% |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001.

**Discussion.** As compared to staff in tuition-only centers, centers receiving Head Start funding had significantly higher shares of assistant teachers and lower shares of lead teachers responding to the NSECE Workforce survey. Centers receiving state pre-K funds had significantly lower shares of lead teachers responding. These patterns could have skewed quality indicators downward, but centers with Head Start and state pre-K funding still compare favorably across many dimensions. We interpret this pattern of results as evidence suggesting that more junior staff in Head Start- and state pre-K-funded centers may be meeting higher quality standards than senior teaching staff in other programs.

Our findings are largely consistent with existing research. There is a growing consensus that Head Start and pre-kindergarten meet higher quality standards than other centers, on average (Adams 2009; Bassok et al. 2016; Dowsett et al. 2008; Gormley et al. 2010; Henry, Gordon, and Rickman 2006; Zhai, Waldfogel, and Brooks-Gunn 2013). Evidence is more mixed on the association between subsidy use and quality (Adams, Zaslow, and Tout 2007; Adams and Katz 2015; Antle et al. 2008; Jones-Branch, Torquati, Raikes, and Pope Edwards 2010). While we are unable to compare workforce quality across subsidized and unsubsidized programs serving similar children and families (as in Johnson, Martin, and Ryan 2014; Johnson, Ryan, and Brooks-Gunn 2012), we do find that staff in centers receiving any subsidy funding are more likely to participate in some forms of professional development than staff in tuition-only centers, though they are also younger, less experienced, and less well educated. Overall, analyses of the NSECE update and confirm existing findings from nearly a decade prior regarding variations in workforce quality by source of funding.

### VARIATION BY ORGANIZATIONAL AUSPICE

We next analyze early care and education workforce quality by organizational auspice, selecting for profit centers (including for profit independent centers as well as franchises and chains) as the reference category. We compare this category to four remaining auspice types: nonprofit independent, nonprofit sponsored, run by government, and other. As with our findings by funding stream, these comparisons demonstrate meaningful differences in workforce quality by organizational auspice.

Specifically, teaching staff in nonprofit and government-run centers were more likely to be older, more experienced, and more highly educated than staff in for-profit programs (see Table 5). Specifically, staff in nonprofit independent centers were 5 percentage points more likely to have an associate's degree and 10 percentage points more likely to have a bachelor's degree or higher than were staff in for-profit centers. Staff in nonprofit sponsored centers were 10 percentage points more likely to have an AA and 13 percentage points more likely to have a BA or higher, while staff in government-run centers were 16 percentage points more likely to have a BA or higher. Across indicators of staff age,

experience, and education, however, staff in for profit centers did not appear to differ from those in "other" auspice centers.

TABLE 5

**Center-Based Early Care and Education Workforce Quality by Auspice**

| | For-profit[a] (ref) | Nonprofit independent | Nonprofit sponsored | Run by gov.[b] | Other |
|---|---|---|---|---|---|
| **Age of Respondent** | | | | | |
| 25 years old or younger | 20% | 13% ** | 14% * | 7% *** | 12% |
| 26–50 years old | 60% | 61% | 58% | 60% | 59% |
| 51+ years old | 19% | 26% * | 27% * | 33% ** | 29% |
| **Years of Experience Caring for Children Ages 0–13** | | | | | |
| 5 years or less | 27% | 21% * | 24% | 15% *** | 27% |
| 5–25 years | 66% | 66% | 66% | 74% † | 62% |
| 25 years or more | 7% | 13% ** | 10% | 12% † | 11% |
| **Highest Level of Education Completed** | | | | | |
| High school or less | 24% | 16% ** | 15% *** | 14% ** | 26% |
| Some college | 35% | 27% * | 21% *** | 25% ** | 21% * |
| Associate degree | 13% | 18% * | 23% *** | 17% | 15% |
| Bachelor's degree or higher | 28% | 38% *** | 41% *** | 44% *** | 38% |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

[a] Includes independent centers and franchises/chains.

[b] Includes independent and sponsored centers.

Teaching staff across center auspices tend to indicate the same motivations for working with young children (see Table 6). Very low proportions (5 percent) of teaching staff overall indicate they are simply motivated by a paycheck, but even lower proportions of teaching staff in government-run or other centers indicate this is the case. The highest proportion (41 to 48 percent) of teaching staff in all auspice types indicate that they are working with young children because it is their personal calling. Teachers in nonprofit independent programs are more likely than those in for-profit centers (the reference category) to select that option, though less likely to view their work as a way to help children. Staff in nonprofit centers are more likely to agree, and those in nonprofit and government-run centers are less likely to disagree, that it is best when teachers actively organize children's play activities, compared with staff in for profit centers. Teaching staff are similarly aligned in their views of their work environments, with very high proportions (81–91 percent) indicating that teamwork is encouraged in their programs or that they are regularly treated with respect.

TABLE 6

**Center-Based Early Care and Education Workforce Quality by Auspice (cont'd)**

| | For-profit[a] (ref) | Nonprofit independent | Nonprofit sponsored | Run by gov.[b] | Other |
|---|---|---|---|---|---|
| **Motivation** | | | | | |
| *Main reason for working with young children:* | | | | | |
| Career/profession/step toward related career | 27% | 26% | 25% | 33% | 23% |
| Personal calling | 41% | 48% * | 46% | 43% | 44% |
| Job with a payment/job while own children are young | 6% | 5% | 5% | 1% *** | 0% *** |
| Way to help children | 23% | 17% * | 22% | 21% | 29% |
| Way to help parents | 1% | 2% | 1% | 1% | 0% * |
| Other | 3% | 2% | 1% * | 1% ** | 3% |
| **Beliefs** | | | | | |
| *Agreement with: Best when teachers actively organize children's play activities* | | | | | |
| Agree or strongly agree | 30% | 36% † | 40% ** | 37% | 37% |
| Neither agree nor disagree | 23% | 26% | 20% | 29% | 27% |
| Disagree or strongly disagree | 46% | 38% * | 40% † | 33% ** | 37% |
| **Work Environment** | | | | | |
| Agree or strongly agree: teamwork is encouraged | 91% | 89% | 89% | 88% | 90% |
| Agree or strongly agree: my coworkers and I are treated with respect on a daily basis | 86% | 84% | 81% † | 82% | 83% |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

[a] Includes independent centers and franchises/chains.

[b] Includes independent and sponsored centers.

The NSECE reveals substantial variation in engagement in professional development activities by center auspice (see Table 7Table 5). Compared to staff in for profit centers, those in nonprofit, government-run, and other centers are between 9 and 16 percentage points more likely to be members of professional organizations and between four and eight percentage points more likely to have participated in one or more PD activities in the last 12 months. Though all staff engaged in PD at high rates, those in government-run centers did so at the highest rates. Staff in nonprofit and government-run centers were more likely to engage in PD on topics like curricula and assessment and less likely to include health and safety. Finally, staff in nonprofit and other centers were much more likely than staff in for profit centers to receive both supervision and review on an annual basis, while staff in for profit and government-run centers were indistinguishable on these indicators.

TABLE 7

**Center-Based Early Care and Education Workforce Quality by Auspice (cont'd)**

| | For-profit[a] (ref) | Nonprofit indep. | Nonprofit sponsored | Run by gov.[b] | Other |
|---|---|---|---|---|---|
| **Membership** | | | | | |
| Is a member of a professional organization focused on caring for children | 19% | 29% *** | 32% *** | 28% * | 35% † |
| **Participation in Professional Development Activities** | | | | | |
| *Participated in one or more PD activities in last 12 mos:* | 89% | 93% † | 95% ** | 97% *** | 95% * |
| Received coaching | 23% | 30% * | 34% *** | 48% *** | 54% ** |
| Took a course | 32% | 31% | 34% | 42% * | 41% |
| Attended a professional meeting | 27% | 37% ** | 37% ** | 39% ** | 32% |
| Visited classrooms in other programs | 40% | 46% † | 49% * | 45% | 56% |
| Attended a professional workshop | 83% | 87% † | 87% † | 88% | 86% |
| **Main Topic of Most Recent Professional Development Activity** | | | | | |
| Cognitive development, including early reading or math | 8% | 9% | 13% * | 10% | 14% |
| Helping children's social or emotional growth, including how to behave well | 22% | 21% | 20% | 19% | 25% |
| Serving children with special physical, emotional or behavioral needs | 6% | 7% | 5% | 11% | 1% *** |
| Working with children who speak more than one language | 0% | 1% | 2% | 1% | 1% |
| Specific curriculum or teaching methods/technology | 8% | 12% * | 11% | 13% † | 15% |
| Child/classroom monitoring and assessment | 1% | 1% | 3% * | 5% † | 6% |
| Classroom health and safety | 26% | 19% * | 16% ** | 11% *** | 20% |
| Other (e.g., physical development & health, how to work with families, planning activities to meet whole class' needs) | 28% | 29% | 30% | 30% | 17% |
| **Supervision and Performance Review** | | | | | |
| *Intensity of supervision/performance review provided* | | | | | |
| Received both supervision & review | 65% | 60% † | 75% ** | 72% | 85% *** |
| Either supervision >1x/year OR review | 29% | 33% | 22% * | 23% | 11% *** |
| Received neither | 6% | 8% | 3% * | 6% | 4% |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

[a] Includes independent centers and franchises/chains.

[b] Includes independent and sponsored centers.

**Discussion.** Responding staff in nonprofit independent, nonprofit sponsored, and government-run centers were more likely to be junior staff (teacher aides and assistant teachers) and less likely to be lead teachers compared with respondents from for profit centers. Despite this imbalance in roles, teaching staff in the nonprofit independent, nonprofit sponsored, and government-run centers meet comparable or better quality standards than the for-profit centers on most dimensions. Previous

research regarding the relationships between quality and auspice has been mixed. One formative study found higher quality for all age groupsin nonprofit versus for-profit programs, regardless of receipt of government funds (Whitebook, Howes, and Phillips 1990). However, more recent research suggests that differences between for profit and nonprofit programs are only found in states with low regulatory standards (Helburn 1995); that these differences mask variation based on whether for profits were national chains or local businesses, and whether nonprofits were affiliated with churches, community agencies, or public institutions (Morris and Helburn 2000); and that nonprofits are only differential in quality when there is sufficient consumer demand (Cleveland and Krashinsky 2009). These previously mixed findings suggest that further research into auspice-quality relationships is warranted, particularly given the availability of new data in the NSECE.

### VARIATION BY CENTER FLEXIBILITY

Next, we examine two ways that early care and education centers can offer flexibility to families and the extent to which offering such flexibility corresponds with workforce quality characteristics. Our first indicator identifies centers that offer parents flexibility in the number of care hours they schedule week-to-week, including allowing parents to pay for different hours week-to-week. Our second indicator captures centers providing care during nonstandard hours including evenings, overnight, or weekends. We compare centers that meet these indicators to those that do not.

Overall, we find evidence that more flexible centers may have staff meeting fewer quality benchmarks. For example, staff in centers permitting flexible schedules or payment plans for parents were more likely to have five or fewer years of experience and less formal education (nearly 10 percentage points less likely to have a BA or higher; see Table 8). Similarly, staff in centers open during any nonstandard hours were far more likely to have a high school diploma or less (31 percent compared with 18 percent) and less likely to have a BA or higher (28 percent compared with 36 percent).

TABLE 8

**Center-Based Early Care and Education Workforce Quality by Center Flexibility**

| | Centers permit flexible schedules and/or option to pay for different hours week-to-week | | Centers open during any nonstandard hours (after 7pm, overnight, weekend) | |
|---|---|---|---|---|
| | no | yes | no | yes |
| **Age of Respondent** | | | | |
| 25 years old or younger | 13% | 18% ** | 15% | 20% |
| 26–50 years old | 62% | 58% | 61% | 58% |
| 51+ years old | 25% | 24% | 24% | 22% |
| **Years of Experience Caring for Children Ages 0–13** | | | | |
| 5 years or less | 21% | 26% † | 23% | 27% |
| 5–25 years | 68% | 65% | 67% | 61% |
| 25 years or more | 11% | 10% | 10% | 12% |
| **Highest Level of Education Completed** | | | | |
| High school or less | 17% | 21% * | 18% | 31% *** |
| Some college | 26% | 31% * | 29% | 25% |
| Associate degree | 18% | 16% | 17% | 16% |
| Bachelor's degree or higher | 40% | 31% *** | 36% | 28% * |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

With respect to other indicators, relatively few differences emerged by center flexibility (see Table 9). However, as shown in Table 10, teaching staff in centers that permitted flexible schedules and payment plans were somewhat less likely to be members of professional organizations than those in other centers, and staff in centers open during any non-standard hours were 10 percentage points less likely to join these organizations than those in centers only open standard hours. Differences in annual PD participation were small, though staff in more flexible centers were significantly less likely to receive coaching or attend a professional meeting. These results suggest that workforce quality is lower in more flexible centers, on average.

TABLE 9

**Center-Based Early Care and Education Workforce Quality by Center Flexibility (cont'd)**

| | Centers permit flexible schedules and/or option to pay for different hours week-to-week | | | Centers open during any nonstandard hours (after 7pm, overnight, weekend) | | |
|---|---|---|---|---|---|---|
| | no | yes | | no | yes | |
| **Motivation** | | | | | | |
| *Main reason for working with young children* | | | | | | |
| Career/profession/step toward related career | 26% | 28% | | 27% | 27% | |
| Personal calling | 47% | 41% | * | 45% | 35% | * |
| Job with a payment/job while own children are young | 4% | 5% | | 4% | 7% | |
| Way to help children | 20% | 22% | | 20% | 24% | |
| Way to help parents | 1% | 1% | | 1% | 3% | |
| Other | 1% | 3% | † | 2% | 4% | |
| **Beliefs** | | | | | | |
| *Agreement with: Best when teachers actively organize children's play activities* | | | | | | |
| Agree or strongly agree | 37% | 33% | | 36% | 27% | * |
| Neither agree nor disagree | 26% | 23% | | 24% | 24% | |
| Disagree or strongly disagree | 38% | 44% | * | 41% | 49% | † |
| **Work Environment** | | | | | | |
| Agree or strongly agree: teamwork is encouraged | 91% | 89% | | 90% | 88% | |
| Agree or strongly agree: my coworkers and I are treated with respect on a daily basis | 85% | 82% | | 84% | 84% | |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

TABLE 10

**Center-Based Early Care and Education Workforce Quality by Center Flexibility (cont'd)**

| | Centers permit flexible schedules and/or option to pay for different hours week-to-week | | Centers open during any nonstandard hours (after 7pm, overnight, weekend) | |
|---|---|---|---|---|
| | no | yes | no | yes |
| **Membership** | | | | |
| Is a member of a professional organization focused on caring for children | 28% | 24% † | 27% | 17% ** |
| **Participation in Professional Development Activities** | | | | |
| *Participated in one or more PD activities in last 12 mos:* | 94% | 91% * | 93% | 91% |
| Received coaching | 34% | 28% ** | 32% | 22% * |
| Took a course | 34% | 33% | 33% | 32% |
| Attended a professional meeting | 37% | 30% * | 34% | 29% |
| Visited classrooms in other programs | 46% | 43% | 45% | 41% |
| Attended a professional workshop | 86% | 84% | 86% | 82% |
| **Main Topic of Most Recent Professional Development Activity** | | | | |
| Cognitive development, including early reading or math | 10% | 9% | 10% | 8% |
| *Helping children's social or emotional growth, including how to behave well* | 20% | 22% | 21% | 24% |
| Serving children with special physical, emotional or behavioral needs | 8% | 6% | 7% | 7% |
| Working with children who speak more than one language | 2% | 0% * | 1% | 0% |
| Specific curriculum or teaching methods/technology | 11% | 10% | 11% | 9% |
| Child/classroom monitoring and assessment | 2% | 1% | 2% | 2% |
| Classroom health and safety | 18% | 22% † | 20% | 21% |
| Other (e.g., physical development & health, how to work with families, planning activities to meet whole class' needs) | 29% | 28% | 28% | 29% |
| **Supervision and Performance Review** | | | | |
| *Intensity of supervision/performance review provided* | | | | |
| Received both supervision & review | 68% | 64% | 67% | 61% |
| Either supervision >1x/year OR review | 26% | 30% | 27% | 32% |
| Received neither | 6% | 6% | 6% | 7% |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

**Discussion**. Differences in who responded to the workforce survey by level of center flexibility were minimal and, if anything, suggest differences in quality between the two groups may be greater than we are able to detect in the NSECE. Respondents in centers with flexible schedules/payments were less likely to be an aide (9 vs. 13 percent), and slightly more likely to be a lead teacher (47 percent compared with 42 percent in centers that did not offer schedule/payment flexibility). There were no differences in respondent type by whether centers offered nonstandard hours' care. In turn, if small differences in respondent type by center flexibility influenced the patterns we observed, we would

expect slightly larger gaps in quality between centers that do and do not offer schedule/payment flexibility than documented.

Parents who work outside traditional daytime hours or regular shifts—those commonly in need of more flexible child care—tend to rely on informal child care arrangements more than center-based settings (Enchautegui, Johnson, and Gelatt 2015; Kimmel and Connelly 2007; Kimmel and Powell 2006; Presser 1988). Moreover, the supply of center-based care open outside of standard hours is low (Thompson 2000; Yen Liu 2013; 9 percent of centers nationally in the NSECE). However, centers offering flexible schedules or payments within traditional daytime hours may be more readily available (45 percent of centers nationally, see Appendix B Table 1). Given these trends, few studies explore the quality of *center-based* early care settings that offer schedule flexibility. Our findings, that workforce quality is lower in more flexible centers, complement findings from a study of child care flexibility in The Netherlands showing less caregiver stability over the course of a single day and less daily routine for children in child care centers with greater schedule flexibility (Clasien De Schipper, Tavecchio, Van IJzendoorn, and Linting 2003).

### VARIATION BY LANGUAGE SPOKEN BY STAFF TO CHILDREN

For some families, participation in early care and education may hinge on having access to programs where staff speak languages other than English in the care setting. Accordingly, the NSECE Quick Tabulation files allow us to categorize centers as having staff who speak English only, Spanish only, or English and Spanish (classified as "Any Spanish"), or other languages with participating children.

Overall, we documented very few differences by staff language, and differences that were significant were often only marginally distinguishable from chance. As shown in Table 11, staff working in centers where languages other than English and Spanish were spoken were more likely to belong to a professional association and more likely to participate in a professional development activity in the last 12 months than staff in centers where only English was spoken. Not surprisingly, staff in centers where any Spanish was spoken were more likely to have engaged in a professional development activity focused on working with children who speak more than one language. Results from other analyses are presented in Appendix B Table 3.

TABLE 11

**Center-Based Early Care and Education Workforce Quality by Staff Language**

| | Language Spoken with Children in Centers | | |
|---|---|---|---|
| | English only (ref) | Any Spanish | Other |
| **Membership** | | | |
| Is a member of a professional organization focused on caring for children | 25% | 26% | 33% * |
| **Participation in Professional Development Activities** | | | |
| *Participated in one or more PD activities in last 12 mos:* | 92% | 92% | 96% ** |
| Received coaching | 28% | 35% * | 32% |
| Took a course | 32% | 33% | 40% * |
| Attended a professional meeting | 33% | 33% | 38% |
| Visited classrooms in other programs | 43% | 45% | 49% |
| Attended a professional workshop | 85% | 83% | 90% * |
| **Main Topic of Most Recent Professional Development Activity** | | | |
| Cognitive development, including early reading or math | 9% | 12% | 7% |
| Helping children's social or emotional growth, including how to behave well | 21% | 21% | 24% |
| Serving children with special physical, emotional or behavioral needs | 7% | 7% | 8% |
| Working with children who speak more than one language | 0% | 2% * | 2% |
| Specific curriculum or teaching methods/technology | 11% | 12% | 7% † |
| Child/classroom monitoring and assessment | 2% | 1% | 2% |
| Classroom health and safety | 21% | 20% | 18% |
| Other (e.g., physical development & health, how to work with families, planning activities to meet whole class' needs) | 30% | 25% † | 32% |
| **Supervision and Performance Review** | | | |
| Intensity of supervision/performance review provided | | | |
| Received both supervision & review | 65% | 68% | 68% |
| Either supervision >1x/year OR review | 29% | 27% | 23% |
| Received neither | 6% | 5% | 9% |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

**Discussion.** Responding teaching staff in centers where Spanish or other languages were spoken were more likely to be assistant teachers and less likely to be lead teachers than responding staff in centers where only English was spoken. However, these differences were relatively small. Moreover, given the areas where variations occur in staff quality characteristics, these differences in roles may indicate that the quality of teaching staff in Spanish-speaking and other language centers is slightly under-identified in the NSECE.

## How Does Workforce Quality Vary by the Characteristics of Children and Families Using Centers?

Across the characteristics of children and families using centers, workforce quality varies most by the ages of children served. Additional differences appear between centers that do and do not serve any children qualifying for special education services, as well as by children's home language and race and ethnicity.

### VARIATION BY AGES OF CHILDREN SERVED

Roughly half (52 percent) of centers served infants, toddlers, and preschoolers (from birth to age 5), while slightly fewer centers served only preschoolers (ages 3 through 5, 45 percent) and a very small share of centers served only infants and toddlers (birth until age 3, 3 percent). This uneven distribution of ages served corresponds with a highly uneven distribution of workforce quality. In general, workforce quality was highest in centers that serve only preschoolers; analyses yield mixed findings on whether centers that serve both age groups had higher or equivalent workforce quality as those that only serve infants and toddlers.

Staff serving only preschoolers were older, more experienced caring for children, and had higher levels of education than staff serving other ages (see Table 12). For example, teaching staff in centers serving only preschoolers were half as likely as those in mixed aged centers (those serving infants, toddlers, and preschoolers) to have a high school diploma or less and nearly 20 percentage points more likely to have a BA or higher. Oppositely, staff in centers serving only infants and toddlers were half as likely as those in mixed age centers to attain a BA or higher.

TABLE 12

**Center-Based Early Care and Education Workforce Quality by Ages of Children Served**

| | Centers w/ infants, toddlers, & preschoolers (0–5 yrs; ref) | Centers w/only preschoolers (3–5 yrs) | Centers w/only infants & toddlers (0–3 yrs) |
|---|---|---|---|
| **Age of Respondent** | | | |
| 25 years old or younger | 18% | 7% *** | 30% |
| 26–50 years old | 59% | 64% † | 53% |
| 51+ years old | 23% | 30% ** | 17% |
| **Years of Experience Caring for Children Ages 0–13** | | | |
| 5 years or less | 26% | 18% *** | 22% |
| 5–25 years | 65% | 69% | 74% |
| 25 years or more | 9% | 13% * | 3% ** |
| **Highest Level of Education Completed** | | | |

| | | | |
|---|---|---|---|
| High school or less | 22% | 11% *** | 29% |
| Some college | 32% | 20% *** | 36% |
| Associate degree | 16% | 19% | 19% |
| Bachelor's degree or higher | 30% | 49% *** | 16% ** |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

Although we found fewer differences in staff motivation, beliefs, and work environment across settings by ages served, some results suggest meaningful variation in quality (see Table 13). For example, staff in centers that serve infants, toddlers, and preschoolers were somewhat more likely to consider their work a job with pay or one to do while their own children are young. Interestingly, 11 percent of staff in centers serving only infants and toddlers were motivated by helping parents—a motivation shared by almost no staff in other centers (a difference of marginal statistical significance given the small number of staff in infant/toddler-only centers). Teaching staff in centers serving only preschoolers were substantially more likely to agree that teachers should actively organize children's play.

TABLE 13

**Center-Based Early Care and Education Workforce Quality by Ages of Children Served (cont'd)**

| | Centers w/ infants, toddlers, & preschoolers (0–5 yrs; ref) | Centers w/only preschoolers (3–5 yrs) | Centers w/only infants & toddlers (0–3 yrs) |
|---|---|---|---|
| **Motivation** | | | |
| *Main reason for working with young children* | | | |
| Career/profession/step toward related career | 27% | 28% | 28% |
| Personal calling | 44% | 46% | 37% |
| Job with a payment/job while own children are young | 6% | 2% ** | 1% *** |
| Way to help children | 21% | 22% | 16% |
| Way to help parents | 1% | 0% | 11% † |
| Other | 2% | 1% | 6% |
| **Beliefs** | | | |
| *Agreement with: Best when teachers actively organize children's play activities* | | | |
| Agree or strongly agree | 32% | 42% *** | 41% |
| Neither agree nor disagree | 24% | 25% | 17% |
| Disagree or strongly disagree | 44% | 33% *** | 41% |
| **Work Environment** | | | |
| Agree or strongly agree: teamwork is encouraged | 90% | 90% | 91% |
| Agree or strongly agree: my coworkers and I are treated with respect on a daily basis | 84% | 84% | 83% |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

In terms of professional development activities, teaching staff in centers serving only preschoolers again appear to meet substantially higher quality benchmarks than staff in other centers (see Table 14). They were five percentage points more likely to join professional organizations; they were significantly and substantially more likely to participate in every type of professional development activity included on the NSECE questionnaire. Their professional development topics were more likely to include cognitive development, working with linguistically diverse children, curriculum and pedagogy, and monitoring and assessment. Staff in centers serving only infants and toddlers were less likely to engage in professional development on any of these topics and more likely to engage in activities on other topics. Despite these differences, however, supervision and performance review practices did not appear to differ across centers by the ages of children served.

TABLE 14

**Center-Based Early Care and Education Workforce Quality by Ages of Children Served (cont'd)**

| | Centers w/ infants, toddlers, & preschoolers (0–5 yrs; ref) | Centers w/only preschoolers (3–5 yrs) | Centers w/only infants & toddlers (0–3 yrs) |
|---|---|---|---|
| **Membership** | | | |
| Is a member of a professional organization focused on caring for children | 25% | 30% † | 23% |
| **Participation in Professional Development Activities** | | | |
| *Participated in one or more PD activities in last 12 mos:* | 92% | 95% * | 86% |
| Received coaching | 27% | 40% *** | 27% |
| Took a course | 31% | 37% † | 44% |
| Attended a professional meeting | 31% | 38% * | 40% |
| Visited classrooms in other programs | 43% | 51% ** | 33% |
| Attended a professional workshop | 84% | 89% ** | 85% |
| **Main Topic of Most Recent Professional Development Activity** | | | |
| Cognitive development, including early reading or math | 8% | 14% ** | 3% *** |
| Helping children's social or emotional growth, including how to behave well | 23% | 18% * | 21% |
| Serving children with special physical, emotional, or behavioral needs | 6% | 8% | 2% ** |
| Working with children who speak more than one language | 0% | 2% * | 0% ** |
| Specific curriculum or teaching methods/ technology | 10% | 13% † | 9% |
| Child/classroom monitoring and assessment | 1% | 4% * | 1% |
| Classroom health and safety | 24% | 13% *** | 15% † |
| Other (e.g., physical development & health, how to work with families, planning activities to meet whole class' needs) | 28% | 28% | 50% ** |

| | | | |
|---|---|---|---|
| **Supervision and Performance Review** | | | |
| *Intensity of supervision/performance review provided* | | | |
| Received both supervision & review | 66% | 66% | 73% |
| Either supervision >1x/year OR review | 28% | 26% | 20% |
| Received neither | 5% | 7% | 7% |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

**Discussion.** Differences in workforce respondent roles suggest that preschoolers may experience even higher quality teaching than we are able to detect in the NSECE. Specifically, respondents from centers serving only preschoolers were twice as likely to be aides as those serving children birth to five (18 percent compared with 9 percent). They were also more likely to be assistant teachers and less likely to be teachers or lead teachers. Accordingly, we interpret these findings as a underestimate of workforce quality among staff in centers serving only preschoolers and hypothesize that preschool staff meet even higher quality benchmarks, on average than we are able to document here.

Public underinvestment in care for infants and toddlers compared to preschool-aged children has been well documented. This underinvestment manifests in multiple ways: limited funding for center-based care, limited supply of centers, and low staff and program quality in centers that can afford to operate (Bassok et al. 2016; Macomber et al. 2007). These disparities by child age persist despite growing demand from families—and growing evidence that early care and education for infants and toddlers may have larger and longer-lasting effects on children's cognitive and behavioral development than care for preschoolers.

### VARIATION BY CHILDREN'S RACE AND ETHNICITY

Next, we document quality differences by the racial and ethnic composition of children attending the early care and education centers. We are limited to four racial and ethnic categories in the Quick Tabulation files of the NSECE: Hispanic, white, black, and other race. Our discussion focuses on centers with "high" proportions of each group enrolled (defined earlier in Table 1) and, given growing interest in early childhood education as an opportunity to teach children from diverse backgrounds in integrated classrooms, centers with "medium" enrollments, as well.

We find that levels of professionalism and quality are directly related to the share of Hispanic enrollment in ECE centers, with higher enrollment centers more likely to have staff meeting more quality benchmarks (see Table 15). For example, centers with medium levels of Hispanic enrollment had teaching staff with significantly higher levels of formal education than centers with low levels of Hispanic enrollment (e.g., 38 percent with a BA or more, compared with 30 percent) and were

indistinguishable from centers with high levels of Hispanic enrollment. Staff in centers with high levels of Hispanic enrollment were much less likely than staff in centers with lower Hispanic enrollment to report being motivated by a personal calling and somewhat less likely to feel that teamwork was encouraged or that they were treated with respect in their workplaces. Finally, these staff members showed the highest rates of participation in professional development activities, including participating in coaching and formal coursework; staff in centers with medium and high levels of Hispanic enrollment were nearly 10 percentage points more likely to visit classrooms in other programs than staff in low-enrollment centers. Professional development topics among staff in high enrollment centers were more likely to include cognitive development and working with children who speak more than one language, though the latter constitutes just two percent of recent topics.

In contrast with the results by share of Hispanic enrollment, we find relatively few differences among centers by their proportions of enrolled white children (see Appendix B Table 4). Teaching staff in centers with high levels of white enrollment were less likely to have some college education. Conversely, staff in centers with *low* levels of white enrollment were much more likely to disagree that teachers should actively organize children's play activities; these staff members also engaged in professional development at the highest rates on nearly every available measure and were substantially more likely to have both supervision and performance review.

TABLE 15

**Center-Based Early Care and Education Workforce Quality by Hispanic Enrollment**

| | Hispanic Enrollment | | |
|---|---|---|---|
| | Med. (ref) | High | Low |
| **Age of Respondent** | | | |
| 25 years old or younger | 17% | 12% * | 15% |
| 26–50 years old | 58% | 63% | 63% |
| 51+ years old | 25% | 25% | 22% |
| **Years of Experience Caring for Children Ages 0–13** | | | |
| 5 years or less | 25% | 22% | 23% |
| 5–25 years | 66% | 67% | 66% |
| 25 years or more | 9% | 10% | 11% |
| **Highest Level of Education Completed** | | | |
| High school or less | 17% | 18% | 25% ** |
| Some college | 28% | 30% | 29% |
| Associate degree | 17% | 18% | 16% |
| Bachelor's degree or higher | 38% | 34% | 30% * |
| **Motivation** | | | |
| *Main reason for working with young children* | | | |
| Career/profession/step toward related career | 25% | 29% | 30% |
| Personal calling | 46% | 38% * | 46% |
| Job with a payment/job while own children are young | 5% | 3% † | 5% |
| Way to help children | 21% | 25% | 17% |

| | Hispanic Enrollment | | |
|---|---|---|---|
| | Med. (ref) | High | Low |
| Way to help parents | 1% | 1% | 1% |
| Other | 2% | 4% † | 1% |
| **Beliefs** | | | |
| *Agreement with: Best when teachers actively organize children's play activities* | | | |
| Agree or strongly agree | 36% | 36% | 30% † |
| Neither agree nor disagree | 25% | 20% † | 27% |
| Disagree or strongly disagree | 39% | 44% | 43% |
| **Work Environment** | | | |
| Agree or strongly agree: teamwork is encouraged | 91% | 85% ** | 92% |
| Agree or strongly agree: my coworkers and I are treated with respect on a daily basis | 84% | 80% † | 87% |
| **Membership** | | | |
| Is a member of a professional organization focused on caring for children | 26% | 29% | 23% |
| **Participation in Professional Development Activities** | | | |
| *Participated in one or more PD activities in last 12 mos:* | 92% | 95% * | 89% |
| Received coaching | 30% | 35% † | 26% |
| Took a course | 33% | 38% † | 29% |
| Attended a professional meeting | 31% | 36% | 34% |
| Visited classrooms in other programs | 47% | 46% | 38% * |
| Attended a professional workshop | 85% | 87% | 84% |
| **Main Topic of Most Recent Professional Development Activity** | | | |
| Cognitive development, including early reading or math | 8% | 12% † | 11% |
| Helping children's social or emotional growth, including how to behave well | 20% | 22% | 22% |
| Serving children with special physical, emotional or behavioral needs | 7% | 6% | 7% |
| Working with children who speak more than one language | 1% | 2% † | 0% † |
| Specific curriculum or teaching methods/technology | 11% | 9% | 10% |
| Child/classroom monitoring and assessment | 2% | 2% | 2% |
| Classroom health and safety | 22% | 18% † | 17% † |
| Other (e.g., physical development & health, how to work with families, planning activities to meet whole class' needs) | 28% | 28% | 31% |
| **Supervision and Performance Review** | | | |
| *Intensity of supervision/performance review provided* | | | |
| Received both supervision & review | 66% | 67% | 68% |
| Either supervision >1x/year OR review | 28% | 26% | 27% |
| Received neither | 6% | 7% | 5% |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

Analyses of workforce quality by the proportion of black children enrolled reveal important differences between formal education and ongoing professional development (see Table 16). Specifically, staff in centers with high levels of black enrollment were 10 percentage points *less* likely to have a bachelor's degree or higher. However, these same staff members were *more* likely to be among the most experienced providers, receive both supervision and regular performance review (by six percentage points), and report that teamwork was encouraged at their centers.

Finally, we document few meaningful differences in staff quality by level of "other race" enrollment (see Appendix B Table 5). Staff in centers that enrolled high shares of children not identified as Hispanic, white, or black were 10 percentage points more likely to have a BA or higher and were somewhat more likely to engage in professional development activities like attending professional meetings. Other differences may be obscured by the highly heterogeneous nature of the "other race" category.

**Discussion.** Recent evidence suggests longstanding racial disparities in formal early care and education participation have begun to narrow. Specifically, for Hispanic families, those with the lowest rates of ECE participation historically, enrollment in ECE programs, particularly publicly funded programs (Lopez, Grindal, Zanoni, and George 2017), is on the rise (The Annie E. Casey Foundation 2017). As such, our finding that workforce quality is higher among centers with relatively higher shares of Hispanic enrollment is encouraging. Children in ECE settings with high proportions of Hispanic peers stand to benefit from staff who are more educated and more likely to be engaged in professional development activities, including coaching and formal coursework.

On the other hand, centers with high shares of black students were staffed by workforce members meeting more quality indicators in some domains but fewer quality indicators in others. Though these findings seem to suggest conflicting patterns of workforce quality by share of black enrollment, we note from supplementary analyses that responding staff in high black enrollment centers were more likely to be aides than to fill other instructional roles, causing some concern that findings may not represent the quality of all staff in centers that serve high shares of black children. However, the higher likelihood of staff being aides may also reflect the experiences of some black children; because centers with high levels of black enrollment are more likely to receive Head Start funding than other centers (23 percent compared to 12 percent for medium black enrollment centers and 14 percent for low black enrollment centers, based on analyses not presented), they are likely to foster classroom experiences where children interact with both aides and teachers or lead teachers.

TABLE 16

**Center-Based Early Care and Education Workforce Quality by Black Enrollment**

| | Black Enrollment | | |
|---|---|---|---|
| | Med. (ref) | High | Low |
| **Age of Respondent:** | | | |
| 25 years old or younger | 18% | 17% | 10% ** |
| 26–50 years old | 61% | 58% | 60% |
| 51+ years old | 21% | 25% | 30% ** |
| **Years of Experience Caring for Children Ages 0–13** | | | |
| 5 years or less | 26% | 24% | 22% |
| 5–25 years | 67% | 63% | 67% |

| | Black Enrollment | | |
|---|---|---|---|
| | Med. (ref) | High | Low |
| 25 years or more | 7% | 13% ** | 11% † |
| **Highest Level of Education Completed** | | | |
| High school or less | 18% | 22% | 14% |
| Some college | 29% | 33% | 26% |
| Associate degree | 16% | 18% | 19% |
| Bachelor's degree or higher | 36% | 27% ** | 41% |
| **Motivation** | | | |
| *Main reason for working with young children* | | | |
| Career/profession/step toward related career | 29% | 28% | 26% |
| Personal calling | 44% | 40% | 48% |
| Job with a payment/job while own children are young | 6% | 3% | 4% |
| Way to help children | 19% | 26% * | 19% |
| Way to help parents | 0% | 2% | 1% |
| Other | 2% | 2% | 2% |
| **Beliefs** | | | |
| *Agreement with: Best when teachers actively organize children's play activities* | | | |
| Agree or strongly agree | 33% | 34% | 38% |
| Neither agree nor disagree | 24% | 21% | 25% |
| Disagree or strongly disagree | 42% | 45% | 37% |
| **Work Environment** | | | |
| Agree or strongly agree: teamwork is encouraged | 88% | 94% *** | 89% |
| Agree or strongly agree: my coworkers and I are treated with respect on a daily basis | 83% | 85% | 82% |
| **Membership** | | | |
| Is a member of a professional organization focused on caring for children | 25% | 27% | 26% |
| **Participation in Professional Development Activities** | | | |
| *Participated in one or more PD activities in last 12 mos:* | 92% | 92% | 94% |
| Received coaching | 29% | 31% | 29% |
| Took a course | 33% | 36% | 33% |
| Attended a professional meeting | 30% | 35% | 36% |
| Visited classrooms in other programs | 43% | 48% † | 44% |
| Attended a professional workshop | 84% | 84% | 87% |
| **Main Topic of Most Recent Professional Development Activity** | | | |
| Cognitive development, including early reading or math | 10% | 10% | 9% |
| Helping children's social or emotional growth, including how to behave well | 22% | 19% | 21% |
| Serving children with special physical, emotional or behavioral needs | 6% | 6% | 7% |
| Working with children who speak more than one language | 1% | 1% | 2% |
| Specific curriculum or teaching methods/technology | 11% | 8% | 12% |
| Child/classroom monitoring and assessment | 2% | 1% | 3% |
| Classroom health and safety | 20% | 28% ** | 18% |
| Other (e.g., physical development & health, how to work with families, planning activities to meet whole class' needs) | 29% | 28% | 29% |
| **Supervision and Performance Review** | | | |
| *Intensity of supervision/performance review provided* | | | |
| Received both supervision & review | 65% | 73% ** | 66% |
| Either supervision >1x/year OR review | 29% | 24% † | 27% |
| Received neither | 6% | 3% ** | 7% |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

### VARIATION BY CHILDREN'S HOME LANGUAGE

Early care and education workforce quality characteristics do not appear to vary systematically by the proportion of enrolled children who speak a language other than English at home, except participation in professional development activities (see Appendix B Table 6). Specifically, staff in centers with high proportions of children from non-English speaking families were *more* likely to participate in external activities like course-taking or visiting other classrooms, and to receive supervision, performance review, or both. These quality differences suggest that teachers of young children likely to need enrichment in the language and literacy domains are taking advantage of opportunities to learn about and be supported in adopting the most cutting edge practices for this population.

Similarly, instructional staff in centers where parents require an interpreter met several more quality benchmarks than staff in other centers (see Appendix B Table 7). These staff members had higher levels of formal education and were more likely to participate in a variety of forms of professional development, be a member of a professional organization, be motivated by a commitment to helping children, and agree that it's best for teachers to actively organize play.

**Discussion.** Quality differences by children's home language are particularly noteworthy given that supplementary analyses show staff in centers with non-English speaking parents who responded to the NSECE were also more likely to be assistant teachers and less likely to be lead teachers. Thus, whereas their professional roles entail less stringent requirements for both pre- and in-service quality, on average, we document higher quality on a range of quality indicators.

### VARIATION BY CHILDREN QUALIFYING FOR SPECIAL EDUCATION SERVICES

Teacher quality characteristics in centers that serve children with Individualized Education Plans (IEPs) or Individualized Family Service Plans (IFSP) was higher than quality in other centers on a wide variety of measures (see Table 17). Staff in centers serving any children with disabilities had more experience, higher levels of formal education, more agreement that children's play activities should be organized by teachers, higher rates of enrollment in professional organizations, and higher likelihoods of participating in nearly every form of professional development, on average. Interestingly, these staff showed no significant differences on motivation for their work.

TABLE 17

**Center-Based Early Care and Education Workforce Quality by Special Education Enrollment**

| | Any Students in Center with IEP/IFSP | |
|---|---|---|
| | **No** | **Yes** |
| **Age of Respondent** | | |
| 25 years old or younger | 17% | 14% |
| 26–50 years old | 61% | 60% |
| 51+ years old | 22% | 26% |
| **Years of Experience Caring for Children Ages 0–13** | | |
| 5 years or less | 28% | 21% ** |
| 5–25 years | 64% | 68% |
| 25 years or more | 8% | 11% † |
| **Highest Level of Education Completed** | | |
| High school or less | 25% | 15% *** |
| Some college | 32% | 26% * |
| Associate degree | 15% | 19% * |
| Bachelor's degree or higher | 28% | 40% *** |
| **Motivation** | | |
| *Main reason for working with young children* | | |
| Career/profession/step toward related career | 26% | 28% |
| Personal calling | 44% | 45% |
| Job with a payment/job while own children are young | 6% | 4% |
| Way to help children | 20% | 21% |
| Way to help parents | 1% | 1% |
| Other | 3% | 2% |
| **Beliefs** | | |
| *Agreement with: Best when teachers actively organize children's play activities* | | |
| Agree or strongly agree | 30% | 38% ** |
| Neither agree nor disagree | 24% | 24% |
| Disagree or strongly disagree | 46% | 38% ** |
| **Work Environment** | | |
| Agree or strongly agree: teamwork is encouraged | 89% | 90% |
| Agree or strongly agree: my coworkers and I are treated with respect on a daily basis | 85% | 83% |
| **Membership** | | |
| Is a member of a professional organization focused on caring for children | 21% | 29% *** |
| **Participation in Professional Development Activities** | | |
| *Participated in one or more PD activities in last 12 mos:* | 91% | 94% * |
| Received coaching | 24% | 35% *** |
| Took a course | 28% | 37% *** |
| Attended a professional meeting | 30% | 35% † |
| Visited classrooms in other programs | 40% | 46% * |
| Attended a professional workshop | 83% | 87% * |
| **Main Topic of Most Recent Professional Development Activity** | | |
| Cognitive development, including early reading or math | 11% | 9% |
| Helping children's social or emotional growth, including how to behave well | 19% | 22% |
| Serving children with special physical, emotional or behavioral needs | 5% | 8% † |
| Working with children who speak more than one language | 0% | 1% † |
| Specific curriculum or teaching methods/technology | 12% | 10% |
| Child/classroom monitoring and assessment | 1% | 3% ** |
| Classroom health and safety | 23% | 18% * |

| | Any Students in Center with IEP/IFSP | |
|---|---|---|
| | **No** | **Yes** |
| Other (e.g., physical development & health, how to work with families, planning activities to meet whole class' needs) | 28% | 29% |
| **Supervision and Performance Review** | | |
| *Intensity of supervision/performance review provided* | | |
| Received both supervision & review | 62% | 69% ** |
| Either supervision >1x/year OR review | 31% | 26% † |
| Received neither | 7% | 5% |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

**Discussion.** We interpret variation in workforce quality by whether centers serve students with IEPs (children ages three and older) or ISFPs (for infants and toddlers) as evidence that these centers—by virtue of legal requirements, location in public schools, general level of program resources, or other factors—are likely to offer substantially higher quality care than centers that do not serve children with special needs. Specifically, Head Start requires at least 10% of children in each program to be students with disabilities. Similarly, the federal Individuals with Disabilities Education Act (IDEA) provides federally funded preschool services specifically designed for children with disabilities. To the extent that these publicly funded programs mandate higher quality standards for their staff, our results demonstrating higher workforce quality within programs serving students with an IEP or ISFP may be a function of such standards.

# Conclusions

Variations in workforce quality documented here confirm and expand past research on early care and education workforce quality. In this section, we summarize previous findings and consider the implications of observed quality variation for research, policy, and practice—particularly in light of efforts to advance quality through policy reforms.

## Centers with Systematically Higher Workforce Quality

Early care and education centers receiving any public funding (as compared to tuition-only centers), staffed or attended by speakers of languages other than English, and providing special education services offer the most promising evidence of workforce quality advancement. With respect to funding stream, centers receiving any Head Start funding, and to a lesser degree any state pre-K funding, consistently reported meeting higher workforce quality standards. These funding streams generally come with higher standards for teaching and program quality than do other sources, including requirements for pre-service formal education, support for ongoing in-service training, and use of evidence-based curricula and assessments. They are also predominantly targeted to children from low-income families, who may have the greatest need for high-quality early care and education. Findings suggest that parents who are eligible to take advantage of available cost savings through access to these funding streams would not be sacrificing quality in doing so. Further research on information provision and other parent supports can help translate these findings into effective enrollment policies and practices.

Subsidized centers offer a more mixed picture of the relationship between quality and access. We find inconsistent evidence regarding the quality of that workforce, with staff having less experience and formal education than staff in tuition-only centers but more engagement in professional development activities like course-taking and supervision and review. Given substantial public investments in child care subsidies through the Child Care and Development Fund (CCDF), Temporary Assistance to Needy Families, and other programs, efforts to reformulate subsidy awards and raise quality requirements (for example, the 2014 CCDF reauthorization) may be informed by our findings.

Like Head Start and state pre-K centers, those providing any special education services appear to have teaching staff of significantly higher quality than other centers. Special education services are funded and governed by the federal Individuals with Disabilities Education Act (IDEA). Specific qualifications for preschool teachers and paraprofessionals vary by state and by whether the services

are provided through Part B (ages 3 through 21) or Part C (birth through age 2). Accordingly, we find that centers serving children with IEPs and IFSPs—those who stand to benefit most from early intervention—employ higher quality teaching staff than do other centers. Parents of both special needs and typically developing children, then, may be best served by enrolling in more inclusive settings.

Finally, we interpret the *lack* of quality variation by staff language spoken with children as an indication that families with diverse language needs are similarly well-served by linguistically diverse as monolingual centers. Moreover, the NSECE offers limited evidence suggesting that centers serving parents who require interpreters to communicate and those with high shares of children who do not speak English at home have staff meeting *more* quality benchmarks than other centers. For families of all language backgrounds, then, program sensitivity does not appear to require a trade-off in quality.

## Centers with Systematically Lower Workforce Quality

Despite several positive new findings, the NSECE also confirms past research that documents consistently lower workforce and program quality among several center types. The most powerful story to emerge from our analyses is that centers serving infants and toddlers—alone or in conjunction with preschool-aged children—have staff meeting substantially lower quality standards than do centers serving 3- to 5-year-olds, only. Differences are visible across a wide array of quality indicators, including years of experience, levels of formal education, motivation and beliefs, and several types of professional development activities. They corroborate other evidence (e.g., Bassok et al. 2016; Macomber et al. 2007) documenting lower quality care for infants and toddlers than preschoolers and widely acknowledged underinvestment in care for the youngest learners. They also call into question past evidence (e.g., Loeb et al. 2007) suggesting that early care and education may have detrimental effects on the youngest learners, which may be conflating the quality of infant/toddler care and starting time of early care and education participation.

Few existing policy measures seem well-suited to resolve the meaningful quality differences observed by ages of children served. In fact, these differences may be becoming more widespread and more acute given the growth in preschool programming and the decreasing opportunity for cross-subsidization within centers that serve both infant/toddler and preschool age groups. Our findings suggest a renewed policy and research focus on center-based early care and education for infants and toddlers, building on the federal Early Head Start-Child Care Partnerships and complementing several decades of focus on improving preschool programs at the federal, state, and local levels.

Additional efforts are required to improve workforce quality among centers offering greater flexibility for families through flexible scheduling, payment plans, and nonstandard hours of care. Some evidence suggests that the most flexible centers rate somewhat lower on indicators of quality, including staff education levels and participation in professional development. Quality disparities between more and less flexible centers may present very real trade-offs for many families working nontraditional or inconsistent hours or in need of flexible care due to training or educational needs (Adams and Katz 2015; Adams, Spaulding, and Heller 2015; Adams and Rohacek 2002, 2010; Enchautegui, Johnson, and Gelatt 2015; Sandstrom, Giesen, and Chaudry 2012; Spaulding, Derrick-Mills, and Callan 2016). However, if blended funding and other policy supports were more readily available, families might be able to participate in higher quality programs during standard hours and use wraparound care during nonstandard hours in centers (and perhaps family child care homes) with staff meeting somewhat lower quality standards.

Evidence on quality variation by auspice is mixed and, in some cases, difficult to interpret. For example, nonprofit centers consistently show higher workforce quality than for-profit centers. This evidence aligns with recent research suggesting that, although the cost of nonprofit and for-profit care is roughly equivalent (Blau and Mocan 2002; Helburn 1995), nonprofit programs pay their staff higher wages than for-profit programs, while for-profit programs spend more on facilities (Clevenland and Krashinsky 2009). Findings by auspice suggest that universal preschool policies and other initiatives that provide public funding for private providers may be able to expand access *and* quality by offering resources to nonprofit rather than for-profit providers.

Finally, analyses by children's race and ethnicity provide uneven evidence of disparities in early care and education workforce quality. For example, centers serving high shares of Hispanic and other race children appear to have teaching staff of somewhat higher quality than other centers on indicators like formal education and professional development. We find few differences in the quality of centers serving higher or lower shares of white children. For centers serving high shares of black children, however, we observe a clear difference in quality depending on the indicator: teaching staff appear to be higher quality in terms of their levels of experience, motivations, and participation in professional development, but lower quality in terms of their formal education. While these results may reflect the fact that many staff members in these centers who responded to the NSECE fill aide and assistant teacher roles, they may also suggest lower levels of teaching quality. Further research is required to explore whether the patterns presented here reflect disparities in the experiences of children and families.

# Moving Forward with Center-Based Workforce Quality

In sum, we find the highest quality center-based teaching staff are in programs: receiving funding from Head Start and, to a lesser extent, state pre-K; serving preschoolers only; operating during traditional hours or with fixed schedules/payments; and providing services to children with identified special needs. For many families—those who are low-income and relying on publicly funded programs, those who have children with special needs, and those who speak languages other than English at home—relying on center-based child care does not appear to require a trade-off in care quality. Notably, however, parents with very young children and those with nonstandard or variable work schedules have fewer high-quality center-based care options than other parents. Such variation in the quality of the center-based workforce should be considered in light of efforts to advance ECE quality through policy reforms. While growing public investments in programs like Head Start and state pre-K are supported by findings from our analyses of the NSECE, our results call for a renewed focus on the provision of early childhood education for infants and toddlers and families working variable schedules, among others.

It is important to note that our findings provide a national portrait, but that differences are likely to emerge by state and locality due to differing licensing standards and quality rating and improvement systems for child care, differing standards for pre-K programs, and differing child care subsidy or state level supports and policies for technical assistance and training. Near the time period of data collection for the survey, the National Institute for Early Education Research (2012) recorded 52 pre-K programs offered in 40 states; 30 of those 52 programs required teachers to have a BA degree. Since then, five additional states have added BA requirements for public pre-K teachers (Barnett et al. 2017). Similarly, in 2009, 26 states had quality rating and improvement systems for their child care centers with 14 of them indicating that some percentage of center teachers needed to have BA degrees to qualify for a higher rating (Tout et al. 2010). As of 2014, 13 more states had implemented quality rating systems and, of 39 states total, just over half offered financial supports for higher education of program staff (Holod, Faria, Weinberg, and Howard 2015).

The growth of pre-K programs and improvement in their quality provides a great boost for increasing access for 3- and 4-year olds to higher quality care offered during traditional hours. However, our analyses indicated that the child care workforce serving infants and toddlers and providing nontraditional hour care needs the most improvements. These types of care require a different type of investment. Fortunately, the 2014 reauthorization of the Child Care and Development Block Grant recognizes child care for infants and toddlers and care offered during nontraditional hours among its priorities for states to implement quality improvement strategies. Among the strategies from

which states can choose to improve quality: supporting professional development and training among the child care workforce. The reauthorization also encourages states to improve quality of care for children with disabilities, but our analyses indicate that centers serving children with disabilities already tend to have more highly educated child care professionals, suggesting that perhaps states should continue efforts already in place or take care not to disrupt efforts that are already working. Finally, our analyses also suggest that states should pay attention to the racial and ethnic composition of programs receiving quality improvement resources to assure that they promote equity and access.

One persistent challenge for states is that funds for the Child Care and Development Block Grant have not grown in the way that funds for state pre-K programs and Head Start programs have. Comparing the NIEER calculations in 2012 and 2017, Head Start per child spending has increased 10 percent and pre-K per child spending has increased 24 percent (Barnett et al. 2012, 2017). In contrast, the Child Care Development Block Grant federal funding to the states shrunk 19 percent from 2011 to 2012 (Isaacs et al. 2013) and as reflected in a similar calculation in 2016 it has recovered only $0.1 billion of the $1.2 billion it lost that year (Edelstein et al. 2016). The 2014 reauthorization provides many new requirements for better supporting children's outcomes like increasing the length of time between subsidy redetermination periods (providing more stability for children) and increasing efforts to improve program quality, but it did not provide any additional dollars. This means that more dollars may be used to support each child but that fewer children will likely be served overall, making efforts to increase access for a broader set of children all the more difficult.

As states continue to balance access and quality among early care and education programs, this paper contributes a national portrait of providers in 2012. The Administration for Children and Families and Office of Planning, Research, and Evaluation have commissioned a follow-up to the original NSECE—the National Survey of Early Care and Education: ECE Program and Workforce Study of 2019. This study will allow researchers to replicate our analyses and consider findings in light of CCDBG reauthorization, pre-K expansion, and changes to Head Start, as well as continuing shifts in the demographics and structure of American families with young children. Continued monitoring will inform federal efforts to move forward with quality and shed light on the types of state and local data most useful for supporting the center-based early care and education workforce. In turn, data-driven policy and practice can improve the experiences of children birth to age 5 and provide them with a strong start in life.

# Appendix A. National Survey of Early Care and Education Survey and Sampling Information

This study relies on the Center-based Provider and Workforce Quick Tabulation files of the National Survey of Early Care and Education, released to the public in late 2014. We summarize the survey and sampling characteristics of each file, below. Additional information is available in the NSECE Summary of Data Collection and Sampling Methodology Research Brief (National Survey of Early Care and Education Project Team 2013).

The NSECE's Center-based Provider Survey was administered to a sample of child care centers providing care to children not yet in kindergarten. Centers were drawn from a sampling frame based on state and national administrative lists of regulated, licensed, and other private child care providers across the country. First, a Center-based Provider Screener was administered to confirm and update information from the sampling frame and determine eligibility for the Center-based Provider Survey. Then, out of 15,806 completed screening interviews, 8,265 eligible Center-based providers completed a Center-based Provider Survey interview. Questions were administered to the directors of the ECE programs identified from the sampling frame and the survey constitutes a nationally representative sample of ECE classrooms. Across the screener and center-based provider interview, the overall weighted response rate was 73.7 percent.

Classroom-based instructional staff included in the NSECE Workforce Survey were drawn from centers that participated in the Center-based Provider Survey. One classroom was randomly selected from each ECE center that completed the center-based provider interview for inclusion in the Workforce Provider Survey. Then, from each classroom, one instructional staff member (e.g., a lead teacher, teacher, teacher's assistant, aide, or other) was randomly selected to participate in the workforce survey. Selection was limited to staff members who worked at least five hours per week in the classroom and weighted so that those who worked more hours per week were more likely to be selected. A total of 5,556 workforce interviews were completed out of a sample of 7,230 ECE centers with adequate data for workforce respondent sampling. The weighted interview completion rate was 80.7 percent and the overall weighted response rate for the Workforce Survey was 71.2 percent.

Our analysis focuses on a sample of classroom-based instructional staff from the Workforce Quick Tabulation file linked to data from the Center-based Quick Tabulation file on each individual's respective ECE center. As such, we connect instructional staff members to the ECE centers in which they were employed. Of 5,556 completed Workforce Survey interviews, the Workforce Quick Tabulation file provides access to 4,823 instructional staff responses. Of these 4,823 responses, we lack data on 12 of the corresponding child care centers due to censoring in the Center-based Quick Tabulation file. As a result, our final sample size is 4,811.

Finally, we note that the data available in both Quick Tabulation data files were commonly recoded before release to minimize identifiability and maintain the highest level of sensitivity and confidentiality. Variables were often top- or bottom-coded or had values collapsed into broader categories. As a result, our findings may be limited by data censoring and may differ from results derived from the Public Use or later released versions of NSECE data.

# Appendix B. National Survey of Early Care and Education Survey Data Tables

TABLE B.1

**Characteristics of Early Care and Education Centers**

| | Center-based sample | Analytic workforce sample | |
|---|---|---|---|
| **Funding & Auspice** | | | |
| Centers with private tuition only | 14% | 13% | * |
| *Centers with any funds from* | | | |
| Child care subsidies | 29% | 31% | † |
| Head Start | 17% | 18% | |
| State pre-K | 20% | 20% | |
| Local government | 12% | 13% | |
| *Center auspice* | | | |
| For profit (incl. independent and franchise/chain) | 32% | 30% | * |
| Nonprofit independent | 30% | 31% | |
| Nonprofit sponsored | 20% | 22% | * |
| Run by government (independent/sponsored) | 14% | 14% | |
| Other | 3% | 3% | |
| **Center Flexibility** | | | |
| Centers permit flexible schedules and/or option to pay for different hours week-to-week | 45% | 46% | |
| Centers open during any nonstandard hours (evening 7pm+, overnight, weekend) | 9% | 9% | |
| **Language spoken with children in centers** | | | |
| English only | 62% | 63% | |
| Any Spanish | 28% | 27% | |
| Other | 9% | 10% | † |
| **Ages of Children Served** | | | |
| *Enrollment across age groups* | | | |
| Both infants/toddlers & preschoolers (0–5 yrs) | 52% | 52% | |
| Only preschoolers (3–5 yrs) | 44% | 45% | |
| Only infants/toddlers (0–3 yrs) | 3% | 3% | |
| **Center Enrollment by Race/Ethnicity** | | | |
| *Hispanic enrollment* | | | |
| Centers classified as LOW Hispanic enrollment (0-1% of total) | 25% | 25% | |
| Centers classified as MEDIUM Hispanic enrollment (1-21% of total) | 50% | 51% | |
| Centers classified as HIGH Hispanic enrollment (21%-100% of total) | 25% | 24% | |
| *White enrollment* | | | |
| Centers classified as LOW white enrollment (0-29% of total) | 25% | 23% | † |
| Centers classified as MEDIUM white enrollment (29-90% of total) | 50% | 49% | |
| Centers classified as HIGH white enrollment (90-100% of total) | 24% | 27% | ** |

| | Center-based sample | Analytic workforce sample | |
|---|---|---|---|
| *Black enrollment* | | | |
| Centers classified as LOW black enrollment (0-2% of total) | 25% | 27% | † |
| Centers classified as MEDIUM black enrollment (2-25% of total) | 50% | 49% | |
| Centers classified as HIGH black enrollment (25-100% of total) | 25% | 24% | |
| *Other race enrollment* | | | |
| Centers classified as LOW other race enrollment (0-2% of total) | 25% | 26% | |
| Centers classified as MEDIUM other race enrollment (2-14% of total) | 50% | 49% | |
| Centers classified as HIGH other race enrollment (14-100% of total) | 25% | 25% | |
| **Center Enrollment by Language Needs** | | | |
| Centers serving only children who speak English at home | 30% | 31% | |
| *Centers serving children who speak a language other than English at home* | | | |
| Centers classified as LOW non-English home lang. enrollment (0–5% of total) | 18% | 17% | |
| Centers classified as MEDIUM non-English home lang. enrollment (5–33% of total) | 35% | 35% | |
| Centers classified as HIGH non-English home lang. enrollment (34–100% of total) | 18% | 17% | |
| Centers with any parent(s) requiring an interpreter to communicate | 30% | 29% | |
| **Center Enrollment by Special Education Status** | | | |
| Any students in center with IEP/IFSP | 60% | 62% | |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

TABLE B.2

### Characteristics of the Center-Based Early Care and Education Workforce

| | Analytic workforce sample |
|---|---|
| **Age of Respondent** | |
| 25 years old or younger | 15% |
| 26–50 years old | 60% |
| 51+ years old | 25% |
| **Years of Experience Caring for Children Ages 0–13** | |
| 5 years or less | 23% |
| 5–25 years | 67% |
| 25 years or more | 10% |
| **Highest Level of Education Completed** | |
| High school or less | 19% |
| Some college | 28% |
| Associate degree | 17% |
| Bachelor's degree or higher | 36% |
| **Motivation** | |
| *Main reason for working with young children* | |
| Career/profession/step toward related career | 27% |
| Personal calling | 44% |
| Job with a payment/job while own children are young | 5% |
| Way to help children | 21% |
| Way to help parents | 1% |
| Other | 2% |
| **Beliefs** | |

| | Analytic workforce sample |
|---|---|
| *Agreement with: Best when teachers actively organize children's play activities* | |
| Agree or strongly agree | 35% |
| Neither agree nor disagree | 24% |
| Disagree or strongly disagree | 41% |
| **Work Environment** | |
| Agree or strongly agree: teamwork is encouraged | 84% |
| Agree or strongly agree: my coworkers and I are treated with respect on a daily basis | 90% |
| **Membership** | |
| Is a member of a professional organization focused on caring for children | 26% |
| **Participation in Professional Development Activities** | |
| Participated in one or more PD activities in last 12 mos: | 93% |
| Received coaching | 31% |
| Took a course | 33% |
| Attended a professional meeting | 34% |
| Visited classrooms in other programs | 45% |
| Attended a professional workshop | 85% |
| **Main Topic of Most Recent Professional Development Activity** | |
| Cognitive development, including early reading or math | 10% |
| Helping children's social or emotional growth, including how to behave well | 21% |
| Serving children with special physical, emotional or behavioral needs | 7% |
| Working with children who speak more than one language | 1% |
| Specific curriculum or teaching methods/technology | 11% |
| Child/classroom monitoring and assessment | 2% |
| Classroom health and safety | 20% |
| Other (e.g., physical development & health, how to work with families, planning activities to meet whole class' needs) | 29% |
| **Supervision and Performance Review** | |
| *Intensity of supervision/performance review provided* | |
| Received both supervision & review | 67% |
| Either supervision >1x/year OR review | 28% |
| Received neither | 6% |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

TABLE B.3

## Center-Based Early Care and Education Workforce Quality by Staff Language (cont'd)

| | Language Spoken with Children in Centers | | |
|---|---|---|---|
| | English only (ref) | Any Spanish | Other |
| **Age of Respondent** | | | |
| 25 years old or younger | 15% | 17% | 12% |
| 26–50 years old | 61% | 58% | 61% |
| 51+ years old | 24% | 25% | 27% |
| **Education** | | | |
| **Years of Experience Caring for Children Ages 0–13** | | | |
| 5 years or less | 24% | 23% | 21% |
| 5–25 years | 66% | 68% | 68% |

| | Language Spoken with Children in Centers | | |
|---|---|---|---|
| | English only (ref) | Any Spanish | Other |
| 25 years or more | 10% | 10% | 11% |
| **Highest Level of Education Completed:** | | | |
| High school or less | 20% | 18% | 15% † |
| Some college | 28% | 30% | 27% |
| Associate degree | 15% | 19% † | 21% † |
| Bachelor's degree or higher | 37% | 33% | 37% |
| Experience | | | |
| **Motivation** | | | |
| *Main reason for working with young children* | | | |
| Career/profession/step toward related career | 27% | 28% | 23% |
| Personal calling | 46% | 41% | 44% |
| Job with a payment/job while own children are young | 6% | 4% | 2% ** |
| Way to help children | 18% | 24% * | 25% † |
| Way to help parents | 1% | 1% | 2% |
| Other | 1% | 2% | 4% † |
| **Beliefs** | | | |
| *Agreement with: Best when teachers actively organize children's play activities* | | | |
| Agree or strongly agree | 35% | 35% | 36% |
| Neither agree nor disagree | 26% | 23% | 20% † |
| Disagree or strongly disagree | 40% | 42% | 43% |
| **Work Environment** | | | |
| Agree or strongly agree: teamwork is encouraged | 92% | 88% † | 87% † |
| Agree or strongly agree: my coworkers and I are treated with respect on a daily basis | 85% | 82% | 81% |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

TABLE B.4

## Center-Based Early Care and Education Workforce Quality by White Enrollment

| | White Enrollment | | |
|---|---|---|---|
| | Med. (ref) | High | Low |
| **Age of Respondent** | | | |
| 25 years old or younger | 19% | 10% *** | 13% ** |
| 26–50 years old | 59% | 63% | 60% |
| 51+ years old | 22% | 27% | 27% † |
| **Years of Experience Caring for Children Ages 0–13** | | | |
| 5 years or less | 24% | 21% | 24% |
| 5–25 years | 67% | 68% | 65% |
| 25 years or more | 9% | 11% | 10% |
| **Highest Level of Education Completed** | | | |
| High school or less | 17% | 22% | 20% |
| Some college | 31% | 23% * | 30% |
| Associate degree | 18% | 15% | 17% |
| Bachelor's degree or higher | 34% | 40% | 33% |
| **Motivation** | | | |
| *Main reason for working with young children* | | | |

| | | | |
|---|---|---|---|
| Career/profession/step toward related career | 28% | 24% | 28% |
| Personal calling | 45% | 45% | 42% |
| Job with a payment/job while own children are young | 5% | 7% | 3% † |
| Way to help children | 20% | 21% | 23% |
| Way to help parents | 1% | 1% | 2% |
| Other | 2% | 2% | 2% |
| **Beliefs** | | | |
| *Agreement with: Best when teachers actively organize children's play activities* | | | |
| Agree or strongly agree | 36% | 34% | 32% |
| Neither agree nor disagree | 26% | 26% | 19% ** |
| Disagree or strongly disagree | 38% | 40% | 49% *** |
| **Work Environment** | | | |
| Agree or strongly agree: teamwork is encouraged | 89% | 90% | 90% |
| Agree or strongly agree: my coworkers and I are treated with respect on a daily basis | 83% | 84% | 85% |
| **Membership** | | | |
| Is a member of a professional organization focused on caring for children | 27% | 22% | 28% |
| **Participation in Professional Development Activities** | | | |
| *Participated in one or more PD activities in last 12 mos:* | 92% | 92% | 93% |
| Received coaching | 28% | 31% | 34% * |
| Took a course | 34% | 24% ** | 38% |
| Attended a professional meeting | 33% | 26% † | 38% † |
| Visited classrooms in other programs | 43% | 38% | 51% ** |
| Attended a professional workshop | 84% | 88% † | 86% |
| **Main Topic of Most Recent Professional Development Activity** | | | |
| Cognitive development, including early reading or math | 9% | 11% | 10% |
| Helping children's social or emotional growth, including how to behave well | 21% | 21% | 21% |
| Serving children with special physical, emotional or behavioral needs | 7% | 6% | 7% |
| Working with children who speak more than one language | 1% | 0% * | 1% |
| Specific curriculum or teaching methods/technology | 11% | 10% | 9% |
| Child/classroom monitoring and assessment | 1% | 5% * | 1% |
| Classroom health and safety | 20% | 17% | 24% |
| Other (e.g., physical development & health, how to work with families, planning activities to meet whole class' needs) | 29% | 30% | 27% |
| **Supervision and Performance Review** | | | |
| *Intensity of supervision/performance review provided* | | | |
| Received both supervision & review | 63% | 66% | 74% *** |
| Either supervision >1x/year OR review | 30% | 29% | 22% *** |
| Received neither | 7% | 6% | 4% |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

TABLE B.5

## Center-Based Early Care and Education Workforce Quality by Other Race Enrollment

| | Other Enrollment | | |
|---|---|---|---|
| | Med. (ref) | High | Low |
| **Age of Respondent:** | | | |
| 25 years old or younger | 17% | 15% | 14% |
| 26–50 years old | 59% | 61% | 60% |
| 51+ years old | 24% | 24% | 26% |
| **Years of Experience Caring for Children Ages 0–13** | | | |

| | Other Enrollment | | | | | |
|---|---|---|---|---|---|---|
| | Med. (ref) | | High | | Low | |
| 5 years or less | 23% | | 22% | | 29% | † |
| 5–25 years | 67% | | 71% | | 59% | * |
| 25 years or more | 10% | | 7% | | 12% | |
| **Highest Level of Education Completed** | | | | | | |
| High school or less | 19% | | 13% | * | 22% | |
| Some college | 31% | | 25% | † | 27% | |
| Associate degree | 16% | | 19% | | 19% | |
| Bachelor's degree or higher | 33% | | 43% | ** | 32% | |
| **Motivation** | | | | | | |
| *Main reason for working with young children* | | | | | | |
| Career/profession/step toward related career | 28% | | 31% | | 24% | |
| Personal calling | 44% | | 40% | | 48% | |
| Job with a payment/job while own children are young | 5% | | 6% | | 4% | |
| Way to help children | 21% | | 20% | | 19% | |
| Way to help parents | 1% | | 1% | | 1% | |
| Other | 1% | | 2% | | 4% | * |
| **Beliefs** | | | | | | |
| *Agreement with: Best when teachers actively organize children's play activities* | | | | | | |
| Agree or strongly agree | 33% | | 38% | | 32% | |
| Neither agree nor disagree | 26% | | 23% | | 19% | * |
| Disagree or strongly disagree | 41% | | 40% | | 49% | * |
| **Work Environment** | | | | | | |
| Agree or strongly agree: teamwork is encouraged | 90% | | 87% | | 92% | |
| Agree or strongly agree: my coworkers and I are treated with respect on a daily basis | 83% | | 81% | | 87% | |
| **Membership** | | | | | | |
| *Is a member of a professional organization focused on caring for children* | 27% | | 26% | | 25% | |
| **Participation in Professional Development Activities** | | | | | | |
| *Participated in one or more PD activities in last 12 mos:* | 92% | | 93% | | 92% | |
| Received coaching | 30% | | 32% | | 29% | |
| Took a course | 35% | | 37% | | 32% | |
| Attended a professional meeting | 31% | | 38% | * | 32% | |
| Visited classrooms in other programs | 45% | | 46% | | 39% | |
| Attended a professional workshop | 83% | | 84% | | 87% | † |
| **Main Topic of Most Recent Professional Development Activity** | | | | | | |
| Cognitive development, including early reading or math | 9% | | 9% | | 10% | |
| Helping children's social or emotional growth, including how to behave well | 21% | | 24% | | 21% | |
| Serving children with special physical, emotional or behavioral needs | 5% | | 9% | * | 5% | |
| Working with children who speak more than one language | 1% | | 0% | | 2% | |
| Specific curriculum or teaching methods/technology | 14% | | 9% | * | 8% | ** |
| Child/classroom monitoring and assessment | 1% | | 1% | | 3% | |
| Classroom health and safety | 21% | | 17% | | 21% | |
| Other (e.g., physical development & health, how to work with families, planning activities to meet whole class' needs) | 28% | | 31% | | 29% | |
| **Supervision and Performance Review** | | | | | | |
| *Intensity of supervision/performance review provided* | | | | | | |
| Received both supervision & review | 66% | | 66% | | 68% | |
| Either supervision >1x/year OR review | 29% | | 25% | | 26% | |
| Received neither | 5% | | 8% | | 6% | |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

TABLE B.6

**Center-Based Early Care and Education Workforce Quality by Children's Home Language Enrollment**

| | Non-English Enrollment | | |
|---|---|---|---|
| | Med. (ref) | High | Low |
| **Age of Respondent** | | | |
| 25 years old or younger | 16% | 13% | 17% |
| 26–50 years old | 58% | 62% | 62% |
| 51+ years old | 26% | 25% | 21% |
| **Years of Experience Caring for Children Ages 0–13** | | | |
| 5 years or less | 23% | 24% | 26% |
| 5–25 years | 66% | 66% | 67% |
| 25 years or more | 11% | 11% | 7% * |
| **Highest Level of Education Completed** | | | |
| High school or less | 17% | 15% | 18% |
| Some college | 28% | 30% | 30% |
| Associate degree | 18% | 18% | 14% |
| Bachelor's degree or higher | 37% | 37% | 38% |
| Motivation | | | |
| *Main reason for working with young children* | | | |
| Career/profession/step toward related career | 28% | 27% | 26% |
| Personal calling | 44% | 41% | 43% |
| Job with a payment/job while own children are young | 4% | 2% | 8% * |
| Way to help children | 21% | 25% | 19% |
| Way to help parents | 1% | 2% | 2% |
| Other | 2% | 2% | 2% |
| Beliefs | | | |
| *Agreement with: Best when teachers actively organize children's play activities* | | | |
| Agree or strongly agree | 37% | 36% | 34% |
| Neither agree nor disagree | 23% | 19% | 28% |
| Disagree or strongly disagree | 40% | 45% | 37% |
| **Work Environment** | | | |
| Agree or strongly agree: teamwork is encouraged | 89% | 85% † | 90% |
| Agree or strongly agree: my coworkers and I are treated with respect on a daily basis | 82% | 79% | 86% |
| **Membership** | | | |
| Is a member of a professional organization focused on caring for children | 27% | 28% | 25% |
| **Participation in Professional Development Activities** | | | |
| *Participated in one or more PD activities in last 12 mos:* | 93% | 96% | 91% |
| Received coaching | 31% | 35% | 31% |
| Took a course | 31% | 40% * | 37% |
| Attended a professional meeting | 35% | 37% | 28% † |
| Visited classrooms in other programs | 45% | 52% † | 41% |
| Attended a professional workshop | 86% | 87% | 84% |
| **Main Topic of Most Recent Professional Development Activity** | | | |
| Cognitive development, including early reading or math | 10% | 13% | 7% |
| Helping children's social or emotional growth, including how to behave well | 22% | 23% | 20% |
| Serving children with special physical, emotional or behavioral needs | 8% | 6% | 3% ** |
| Working with children who speak more than one language | 1% | 2% | 0% * |
| Specific curriculum or teaching methods/technology | 10% | 11% | 11% |
| Child/classroom monitoring and assessment | 2% | 1% | 2% |
| Classroom health and safety | 19% | 16% | 24% |

| | Non-English Enrollment | | | | |
|---|---|---|---|---|---|
| | Med. (ref) | High | | Low | |
| Other (e.g., physical development & health, how to work with families, planning activities to meet whole class' needs) | 28% | 27% | | 32% | |
| **Supervision and Performance Review** | | | | | |
| Intensity of supervision/performance review provided | | | | | |
| Received both supervision & review | 66% | 68% | | 65% | |
| Either supervision >1x/year OR review | 25% | 29% | | 31% | |
| Received neither | 8% | 3% | ** | 4% | * |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

TABLE B.7

## Center-Based Early Care and Education Workforce Quality by Participation of Parents Requiring an Interpreter to Communicate

| | Any Parent(s) in Center Requiring an Interpreter | | |
|---|---|---|---|
| | No | Yes | |
| **Age of Respondent** | | | |
| 25 years old or younger | 16% | 13% | |
| 26–50 years old | 59% | 61% | |
| 51+ years old | 24% | 25% | |
| **Years of Experience Caring for Children Ages 0–13** | | | |
| 5 years or less | 24% | 22% | |
| 5–25 years | 66% | 67% | |
| 25 years or more | 10% | 11% | |
| **Highest Level of Education Completed** | | | |
| High school or less | 20% | 16% | * |
| Some college | 29% | 27% | |
| Associate degree | 15% | 21% | * |
| Bachelor's degree or higher | 35% | 36% | |
| **Motivation** | | | |
| *Main reason for working with young children* | | | |
| Career/profession/step toward related career | 28% | 24% | |
| Personal calling | 45% | 43% | |
| Job with a payment/job while own children are young | 5% | 5% | |
| Way to help children | 19% | 25% | * |
| Way to help parents | 1% | 1% | |
| Other | 2% | 2% | |
| **Beliefs** | | | |
| *Agreement with: Best when teachers actively organize children's play activities* | | | |
| Agree or strongly agree | 33% | 38% | * |
| Neither agree nor disagree | 25% | 22% | |
| Disagree or strongly disagree | 42% | 40% | |
| **Work Environment** | | | |
| Agree or strongly agree: teamwork is encouraged | 90% | 88% | |
| Agree or strongly agree: my coworkers and I are treated with respect on a daily basis | 85% | 81% | † |
| **Membership** | | | |
| Is a member of a professional organization focused on caring for children | 24% | 31% | |
| **Participation in Professional Development Activities** | | | |

| | | |
|---|---|---|
| *Participated in one or more PD activities in last 12 mos:* | 91% | 96% |
| Received coaching | 29% | 34% |
| Took a course | 32% | 36% |
| Attended a professional meeting | 33% | 34% |
| Visited classrooms in other programs | 42% | 50% |
| Attended a professional workshop | 84% | 88% |
| **Main Topic of Most Recent Professional Development Activity** | | |
| Cognitive development, including early reading or math | 10% | 10% |
| Helping children's social or emotional growth, including how to behave well | 21% | 22% |
| Serving children with special physical, emotional or behavioral needs | 6% | 8% |
| Working with children who speak more than one language | 0% | 2% |
| Specific curriculum or teaching methods/technology | 11% | 11% |
| Child/classroom monitoring and assessment | 2% | 1% |
| Classroom health and safety | 21% | 18% |
| Other (e.g., physical development & health, how to work with families, planning activities to meet whole class' needs) | 29% | 28% |
| **Supervision and Performance Review** | | |
| Intensity of supervision/performance review provided | | |
| Received both supervision & review | 66% | 68% |
| Either supervision >1x/year OR review | 28% | 26% |
| Received neither | 6% | 6% |

**Notes:** † p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Figures rounded to the nearest 1%.

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