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New Evidence on Teacher Turnover in Early Childhood

Daphna Bassok
University of Virginia

Anna J. Markowitz
University of California, Los Angeles

Laura Bellows
University of Virginia

Katharine Sadowski
Cornell University

This brief provides a systemwide look at early childhood teacher turnover using data from all publicly funded, center-based early childhood programs in Louisiana, including subsidized child care, Head Start, and pre-kindergarten. It provides new evidence on the prevalence of turnover and explores whether teachers who leave differ from those who stay on a widely used measure of teacher–child interaction quality. Results show that more than one third of teachers leave their program from one year to the next, and the vast majority of teachers who leave are not teaching in another program the following year. Turnover rates are higher among teachers working in child care and with younger children. Compared with teachers who stay, those who leave are rated lower on interaction quality.

Keywords: *early childhood, teacher research, educational policy, descriptive analysis*

Early childhood education (ECE) programs can have long-lasting impacts for both children and society (Markowitz et al., 2018), and research suggests that these benefits hinge on the quality of the early educators in the room (The Institute of Medicine [IOM] & National Research Council [NRC], 2015). Unfortunately, in the United States, the oftentimes poor working conditions faced by the adults who teach and care for young children as well as the related teacher turnover may undermine efforts to expand access to high-quality ECE (Howes, 1999; Totenhagen et al., 2016; Tran & Winsler, 2011; Whitebook et al., 2014; Whitebook & Sakai, 2003).

Although high turnover rates in ECE are often cited as a problem, the prevalence of turnover across diverse ECE settings—including subsidized child care, Head Start, and state pre-kindergarten—is not well understood (Phillips et al., 2019; Totenhagen et al., 2016; Whitebook et al., 2014). Estimates of turnover vary widely. For example, according to a 2012 national survey of ECE directors, 13% of teachers at public ECE sites left their sites over a 12-month period (Phillips et al., 2019), whereas other national estimates are nearly twice that high (Bassok et al., 2013), and smaller, site-based studies often cite rates as high as 40% (e.g., Tran & Winsler, 2011; Wells, 2015). That so many existing

studies rely on small, nonrepresentative samples, single ECE sectors, director reports (Totenhagen et al., 2016), or inconsistent definitions of turnover (e.g., site-level, industry-level, cohort-level) makes it difficult to accurately characterize (or address) the problem.

In the K–12 context, longitudinal data systems allow researchers to track teacher exits and transfers across *all* public schools within a state, and these data have facilitated the large body of research on the prevalence, predictors, and implications of K–12 teacher turnover (Adnot et al., 2017; Hanushek et al., 2016; Redding & Henry, 2018; Ronfeldt et al., 2013; Sorensen & Ladd, 2020). There is no comparable data tracking ECE turnover.

A major challenge for tracking ECE turnover is that in the United States, publicly funded, center-based ECE is provided through three sectors: subsidized child care, which includes private businesses that receive public funding to serve children of all ages; federally funded Head Start, which serves children from birth through 5; and school-based pre-kindergarten, which is typically funded through state or local dollars, administered through local public school systems, and often serves only 4-year-olds. The sectors receive substantially different levels of per-child funding, face different quality regulations, and offer starkly different levels of teacher pay, benefits, and professional opportunities (Whitebook et al., 2014). They operate independently and rarely coordinate workforce data collection. In fact, oftentimes, no data exist to track teacher turnover even *within* sectors (e.g., states do not track the movements of teachers from one child care program to another). The decentralized nature of ECE and the lack of coordinated data either within or between sectors severely compromise our understanding of the scope and nature of ECE turnover, making it difficult for policymakers to effectively target resources to support and retain early educators.

In this brief, we use unique administrative data from the Louisiana Department of Education (LDOE) to provide insight into ECE teacher turnover. Our data have two advantages over earlier data: (a) We can observe *all* lead teachers working in publicly funded, center-based ECE settings in Louisiana—including teachers working in subsidized child care, federally funded Head Start, and school-based pre-kindergarten, and (b) we observe each teachers' ratings from an in-person observation focused on the quality of teacher–child interactions.

These data features allow for three main contributions. First, we are able to compare turnover rates across sectors. This is important because the ECE sectors differ significantly with respect to their teacher credentialing requirements, rates of compensation, and a host of other structural factors that have been hypothesized to influence turnover (Totenhagen et al., 2016; Whitebook et al., 2014; Whitebook & Sakai, 2003). In many states, including Louisiana, lead teachers in school-based pre-kindergarten programs must hold educational credentials similar to elementary school teachers and are paid on the same pay scale. In contrast, many child care teachers lack education beyond a high school diploma, earn below US$10 per hour and are significantly more likely to depend on government assistance programs (Whitebook et al., 2014). A recent survey in two large Louisiana communities showed that 43% of child care lead teachers had a high school diploma or less as their highest level of education, compared with only 10% of Head Start lead teachers, and about 2% of school-based teachers (Bassok et al., 2019). This analysis is the first we are aware of to leverage statewide data from *all* lead teachers in publicly funded, center-based programs to describe sector-based turnover. Similarly, although the youngest children are often in the least regulated settings (e.g., child care), existing studies have not disaggregated turnover by age groups served. Our study fills those gaps.

Second, our data allow us, for the first time, to disaggregate teacher turnover to understand whether teachers who leave their program switch to another program in the same sector, another program in a different sector, or discontinue teaching in the publicly funded, center-based system altogether. Other existing studies have not been able to delineate across these scenarios, a major limitation as each implies different policy solutions.

The final contribution of our data is that they provide the first opportunity we are aware of to explore whether ECE teachers who leave their program differ from those who stay or enter on a

widely used measure of classroom quality. This is important because the effects of turnover may depend on the characteristics of the teachers who leave and those who replace them. In both the ECE and K–12 literatures, there is concern that higher ability teachers may be more likely to leave because they are more able to access higher paying, lower stress jobs than their peers (e.g., Barnett, 2003; Johnson, 2006; Loeb et al., 2005), but to our knowledge, this is the first systemwide exploration of this hypothesis in ECE.

Data and Measures

This brief uses data collected by LDOE as part of their Quality Rating and Improvement System (QRIS). QRIS are accountability systems which aim to define and measure quality and incentivize improvement. Participation in Louisiana's QRIS is mandatory for all publicly funded, center-based ECE programs and as part of the QRIS, Louisiana collects observational data twice a year in *every* classroom serving toddler- or preschool-aged children within *all* publicly funded, center-based ECE programs. Our data, which stem from these observations, thus include the *universe* of lead teachers working in these programs. With these data, we address three questions:

1. What proportion of teachers working in publicly funded, center-based ECE programs were still employed in the same program the following year, and do patterns vary by sector and child age?
2. Of teachers who leave their programs, what proportion stops teaching in publicly funded, center-based ECE programs in Louisiana altogether and what proportion switches to another program?
3. Do teachers who leave their programs differ from those who stay or newly entering teachers with respect to the observed quality of their interactions with children?

Measuring Quality

LDOE measures the quality of teacher–child interactions using the Classroom Assessment Scoring System (CLASS, Pianta et al., 2008), a widely used observational tool that has been linked to children's development in many contexts including Louisiana (Vitiello et al., 2018), although recent evidence highlights that correlations with learning are often modest and inconsistent (Burchinal, 2018; Guerrero-Rosada et al., 2020).

CLASS is a classroom-level measure that captures the warmth and sensitivity of interactions, the extent to which the classroom is organized in a child-centered manner, and the use of language and feedback to support children's development. Observations are conducted by certified reliable observers and scales differ slightly for preschool-aged (3- to 5-years old) and toddler (15- to 36-months-old) classrooms, but both range from 1 to 7 (see Supplementary Appendix A in the online version of the journal).

Louisiana conducts CLASS observations twice a year in *every* classroom in every publicly funded, center-based program serving toddler- or preschool-aged children; each year, we average both scores to generate teachers' CLASS scores. LDOE has collected these data statewide starting in the 2015–2016 school year. This brief focuses on data collected in the most recent years available (2017–2018 and 2018–2019), with results for prior years presented in Supplementary Appendices in the online version of the journal.

Defining Turnover

Each CLASS observation is linked to the teacher leading the class during observation (see Supplementary Appendix A in the online version of the journal for more detail). We use these data to operationalize turnover. First, we calculate the percentage of teachers who are no longer observed *at their same program* the next year; that is, we observe them in one program in 2017–2018, and not in 2018–2019. We define "stayers" as teachers observed in the same program at least once in each year: that is, they were a "stayer" if they appeared in the 2017–2018 data in either fall or spring and again in 2018–2019 in either fall or spring. "Leavers" are those teachers observed at their program only in 2017–2018 and "entrants" are teachers new to their program in the 2018–2019 data.

We then disaggregate program leavers into (a) those who are observed the following year in a

different program but in the same sector (e.g., a Head Start teacher moving to a different Head Start); (b) those who are observed in a publicly funded, center-based program in a different sector (e.g., a Head Start teacher moving to a pre-kindergarten), and (c) those who are no longer observed at all. Understanding the extent to which ECE teachers who leave their program remain in the field is critical, especially for understanding returns on professional development investments.

Study Sample

LDOE classifies ECE programs as belonging to one of three sectors: child care, Head Start, or school-based pre-kindergarten. Teachers are identified as serving "toddlers" (15–36 months) or "preschoolers" (3–5 years) based on the age of the majority of children in the classroom. Because infant rooms were not observed during the study period, infant teachers are excluded. School-based settings only serve preschoolers, but both Head Start and child care serve children across ages (see Supplementary Appendix B in the online version of the journal).

Our sample for our focal analyses includes about 5,900 teachers in 1,500 programs. In 2017–2018, about half of teachers worked in child care (48%), about a third in school-based programs (34%), and the remainder in Head Start (18%). We excluded the 10% of programs that operated and/or served publicly funded children in only one of our study years because including these programs mechanically overstates turnover.

Results

Figure 1 provides the overall proportion of teachers who turned over, overall, by sector, and by age. It shows that more than one third of teachers observed at their program in 2017–2018 were not teaching there the following year. This is more than twice the rate estimated for K–12 teachers (Goldring et al., 2014; Redding & Henry, 2018). The figure also shows large differences in turnover across sectors and child age. For instance, while about one fourth of teachers working in school-based settings were no longer teaching at their program the following year, nearly half of child care teachers (46%) stopped teaching at their program from one year to the next.

Teachers working with toddlers were also nearly 20 percentage points more likely to stop teaching at their program than those working with older children. In part, this may be because teachers of toddlers do not work in schools, which offer different working conditions than their counterparts in other sectors. However, even when comparing *within* the child care and Head Start sectors—which serve both ages—the turnover rate for teachers of toddlers was still higher than the turnover rate for teachers of preschool-aged children (see Supplementary Appendix Figure B1 in the online version of the journal). For instance, in subsidized child care centers, the turnover rate for teachers of toddlers was 11 percentage points higher than for teachers of preschool-aged children.

Exits Versus Switchers

Table 1 shows the vast majority of teachers who left their programs between 2017–2018 and 2018–2019 were not observed as lead teachers in any publicly funded Louisiana center the following year. Put another way, among all lead teachers in the data, 37% were no longer at their site the following year and 32% were no longer at *any* site in our data. Overall, about 11% of leavers (and 3.96% of all teachers) were observed working in a different program in the same sector (e.g., a child care teacher moving to a different child care program), and only 3% of leavers (1.03% of the total) were observed working in a different sector. Patterns were similar across sectors and age groups, although 90% of teachers who left subsidized child care were no longer in the data the following year, compared with 85% of pre-kindergarten teachers and 74% of Head Start teachers.

Turnover and Teacher–Child Interactions

Figure 2 shows average 2017–2018 CLASS scores for leavers (teachers who are no longer observed at the same program in 2018–2019) and stayers (teachers who were observed at the same program in both years). It also shows average 2018–2019 CLASS scores for the stayers and for teachers who are newly observed at that program in 2018–2019 (entrants). The figure only includes

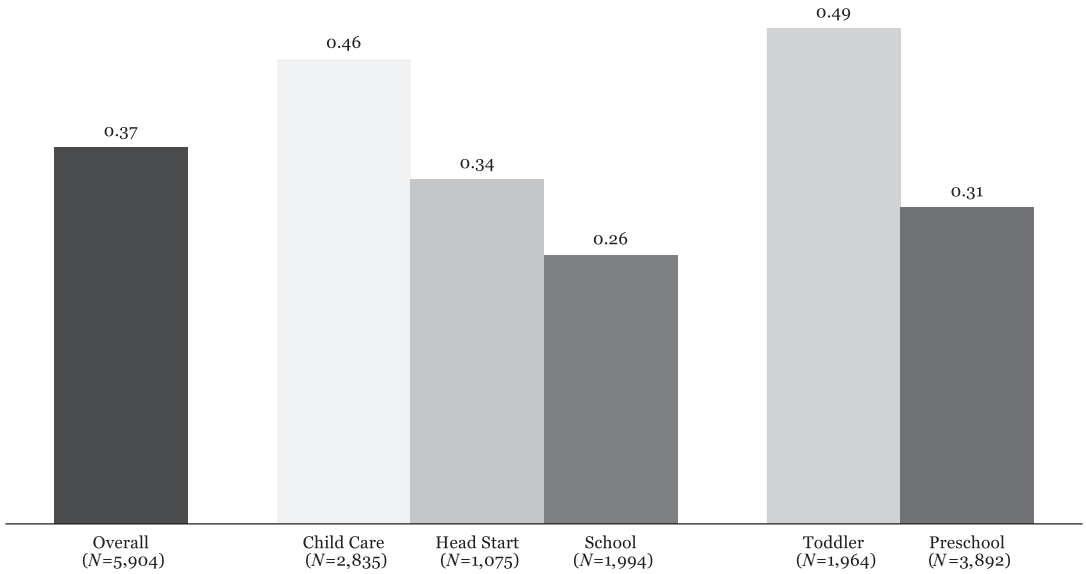

FIGURE 1. *Early childhood teacher turnover in Louisiana: Proportion of 2017–2018 teachers no longer teaching in the same program in 2018–2019.*
Note. Counts of preschool and toddler teachers do not sum to the total number of teachers. An additional 48 teachers, who are included in overall turnover rates and turnover rates disaggregated by sector, taught both preschoolers and toddlers in 2017–2018.

teachers working with preschoolers because of small differences in the CLASS tool by age group (see Supplementary Appendix A in the online version of the journal). Although it is often posited that higher quality teachers are most likely to exit, our results show that, at least with respect to the CLASS, ECE teachers who leave their sites do not provide systematically stronger interactions for children. Rather, leavers' CLASS scores were 0.33 points lower than stayers' scores in 2017–2018, which was roughly 46% of the full sample standard deviation (0.71). This pattern holds across sectors (see Supplementary Appendix B in the online version of the journal): For nearly all sector and age combination, leavers had CLASS scores 0.20 to 0.30 points below stayers. At the same time, the figure also highlights that new entrants scored similarly to leavers, and also lower than stayers in the 2018–2019 year. This suggests that targeted supports for new teachers may be a worthwhile investment (see Supplementary Appendix B in the online version of the journal).

Discussion

Understanding the scope, causes, and consequences of turnover in ECE is essential for ensuring high-quality early learning opportunities. Unfortunately, there is a workforce data deficit in ECE, which limits our understanding of the early educators who play a critical role in shaping children's development (Whitebook et al., 2018). This brief used data from Louisiana's QRIS to provide a systemwide look at ECE teacher turnover from all lead teachers working in publicly funded, center-based programs over a 2-year period.

We find that ECE teacher turnover in Louisiana is high relative to both K–12 teacher turnover and to ECE teacher turnover reported in national data (e.g., Bassok et al., 2013; Phillips et al., 2019; Redding & Henry, 2018; Whitebook et al., 2014). More than a third of ECE teachers observed in 2017–2018 were no longer observed at that same program 1 year later. This level of instability likely harms children (Markowitz, 2019; Ronfeldt et al., 2013; Tran & Winsler, 2011) and compromises the success of quality improvement efforts.

Our brief also provides the first systemwide evidence we are aware of on the extent to which teachers who leave their program switch to other programs. We find that the vast majority of ECE teachers who leave their programs are not observed teaching in any publicly funded, center-based ECE program in Louisiana the following

TABLE 1

ECE Teacher Mobility in Louisiana, 2017–2018 to 2018–2019, Stratified by Age and Sector

	Overall	Child care	Head Start	School	Toddler	Preschool
Overall turnover rate (%)	37.01	45.68	33.86	26.38	48.68	31.09
Year-to-year teacher mobility						
% at same program	62.99	54.32	66.14	73.62	51.32	68.91
% at different program, same sector	3.96	3.56	6.51	3.16	3.92	4.01
% in different sector	1.03	0.81	2.14	0.75	0.81	1.13
% leaving ECE	32.01	41.31	25.21	22.47	43.94	25.95

Note. Leaving ECE refers to leaving teaching in publicly funded, center-based ECE in Louisiana. ECE = early childhood education.

year (Table 1). This pattern raises concerns that investments in professional development are severely compromised by so many teachers leaving the field each year.

The overall turnover rate masks considerable variation across sector and age of children served. Nearly half of child care teachers are no longer at their program 1 year later. In school-based settings, which provide the highest pay and require the highest levels of education, turnover is about half as high. Turnover is also pronounced among those teachers working with toddlers: Nearly half of toddler teachers turned over from one year to the next. Our findings highlight the need for specific efforts to reduce the large disparities across ECE sectors with respect to compensation and other professional supports, and suggest a particular need to focus on supports for teachers of the youngest children.

To do so effectively, information is needed about the correlates of turnover, including specific characteristics of the teachers who leave and the programs they exit. We observe one such characteristic: teachers' ratings on an observational measure of interaction quality. Counter to the hypothesis that the most effective teachers are most likely to leave, our results indicate that, at least with respect to CLASS scores, those teachers who left were rated somewhat lower than those who stayed. Although encouraging, there are many potential explanations for the observed patterns (e.g., teachers with less experience may have both lower CLASS scores and higher turnover; program leaders may counsel out teachers with lower scores), and the current data do not allow us to unpack these links.

More data are needed to unpack these patterns and to identify the drivers of turnover more broadly. Unfortunately, the data used for the current analysis lack information on teachers' education levels, experience, wages, access to professional development, or other factors that may relate to turnover decisions (e.g., Grissom et al., 2016; Totenhagen et al., 2016; Whitebook et al., 2016). Alongside efforts to track teacher mobility across longer periods of time, these are key areas for future research.

The data used in the current study do, however, provide unprecedented coverage of a statewide ECE landscape—including observed measures of turnover for every teacher in every toddler and preschool classroom in every publicly funded, center-based program in the state—allowing for a more comprehensive look at turnover in ECE than earlier studies which have typically relied on small samples and director reports. Moreover, although we present data from 2 years (2017–2018 to 2018–2019) for simplicity, analyses presented in Supplementary Appendix Table A1 in the online version of the journal show that turnover rates, including estimates of teachers' cross-sector mobility, are consistent across all three year-to-year time periods from 2015–2016 to 2018–2019.

Louisiana is a unique context and it is not clear whether our results generalize to other states or other types of programs (e.g., private schools or family day homes). We know, for example, that K–12 teacher turnover is higher in Louisiana than in many states, so it is plausible our ECE turnover rates are higher as well. We do expect that the patterns we document with respect

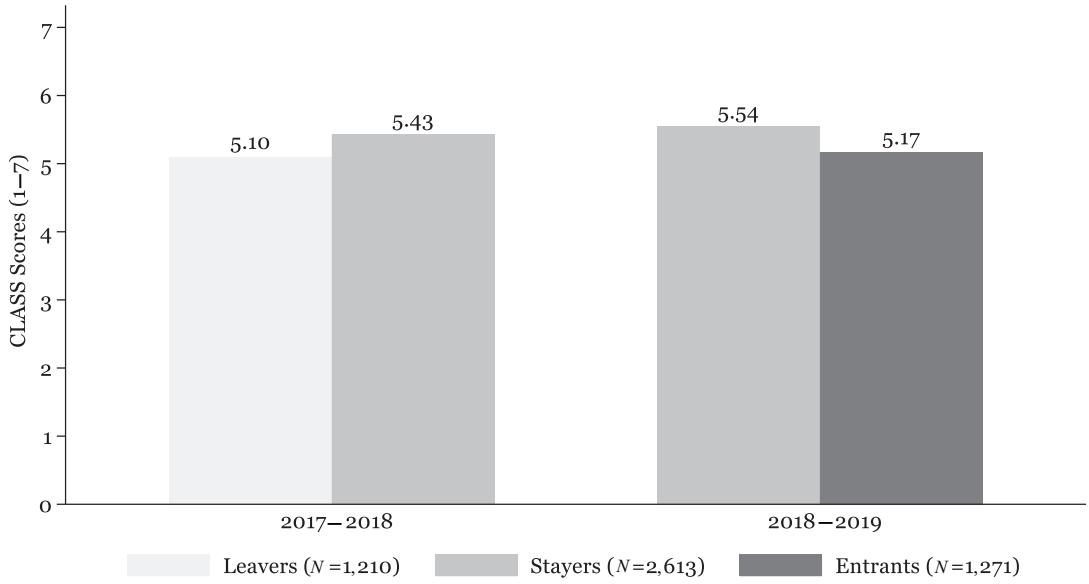

FIGURE 2. *CLASS scores for teachers working with preschoolers by turnover status.*
Note. Counts of "stayers" are for teachers working with preschoolers in 2017–2018 who were also working with preschoolers at the same program in 2018–2019. An additional 69 teachers, who are included in turnover rates, remained at the same program but switched from teaching preschoolers in 2017–2018 to teaching toddlers in 2018–2019. CLASS = Classroom Assessment Scoring System.

to sector and age would replicate in other state contexts. This is because the very low compensation, lack of professional supports, and minimal education requirements of child care teachers relative to early educators in other sectors are largely consistent across states (e.g., Whitebook et al., 2014; Whitebook & Sakai, 2003). We acknowledge, however, that this is an empirical question, and hope more states begin compiling data that would allow for much-needed cross-state comparisons.

Tracking turnover was not an explicit goal of Louisiana's QRIS, and the data are imperfect for the current analysis. For one thing, they lack teacher identifiers beyond names. We get around this using fuzzy name matching, but caution readers this approach is less precise than matching with unique identifiers. Second, like many datasets used to study K–12 teacher turnover, our data lack information about early educators other than lead teachers. Nonetheless, the use of QRIS data in this brief does suggest that with relatively small additional investments, the collection of QRIS data could provide a rich opportunity for better understanding the ECE workforce, particularly when participation is mandatory, as in Louisiana. QRIS data could provide an opportunity to explore how factors such as education and compensation affect turnover. They also create an opportunity to track investments in ECE quality, document cross-sector disparities, and target supports to the programs and educators who need them most.

Policy Implications

Using data from Louisiana's QRIS, this brief provided the first state-level, systemwide look at ECE teacher turnover, filling an important gap in the literature and providing insights for policymakers in Louisiana and beyond seeking to promote quality improvement and to support the ECE workforce. Our data suggest that policy investments in the ECE workforce that focus on on-the-job training may be inefficient without a concurrent focus on turnover reduction. If more than one third of teachers leave their ECE program from one year to the next, and if the vast majority are no longer teaching in publicly funded ECE sites in the state, investments in professional development and coaching alone will not achieve desired results. Future research

should seek to identify factors that are causally linked to teacher turnover to guide such policies. The substantial disparity in turnover rates across sectors suggests that the structural factors that distinguish the sectors, such as compensations and benefits, may play a role, and the comparably high levels of turnover in classrooms serving the youngest children suggest that identifying and implementing policies supporting teachers in child care settings should be prioritized. These findings provide empirical backing for and lend urgency to calls for the professionalization of the ECE workforce (e.g., IOM & NRC, 2015).

Authors' Note

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ORCID iD

Laura Bellows https://orcid.org/0000-0003-4388-0696

References

Adnot, M., Dee, T., Katz, V., & Wyckoff, J. (2017). Teacher turnover, teacher quality, and student achievement in DCPS. *Educational Evaluation and Policy Analysis*, *39*(1), 54–76.

Barnett, W. S. (2003). *Low wages = Low quality. Solving the real preschool teacher crisis*. National Institute for Early Education Research.

Bassok, D., Fitzpatrick, M., Loeb, S., & Paglayan, A. (2013). The early childhood care and education workforce from 1990 through 2010. Changing dynamics and persistent concerns. *Education Finance and Policy*, *8*(4), 581–601.

Bassok, D., Markowitz, A. J., Smith, A., & Oleson, L. (2019). *The early childhood education workforce in Louisiana: Findings from the 2018 early childhood workforce survey in Jefferson and Rapides Parishes* (Study of Early Education in Louisiana Report No. 2). https://curry.virginia.edu/sites/default/files/uploads/epw/The%20Early%20Childhood%20Education%20Workforce%20in%20Louisiana%20Findings%20from%20the%202018%20Early%20Childhood%20Workforce%20Survey%20in%20Jefferson%20and%20Rapides%20Parishes.pdf

Burchinal, M. (2018). Measuring early care and education quality. *Child Development Perspectives*, *12*(1), 3–9. https://doi.org/10.1111/cdep.12260

Goldring, R., Taie, S., & Riddles, M. (2014). *Teacher attrition and mobility: Results from the 2012–13 teacher follow-up survey. First Look. NCES 2014-077*. National Center for Education Statistics.

Grissom, J. A., Viano, S. L., & Selin, J. L. (2016). Understanding employee turnover in the public sector: Insights from research on teacher mobility. *Public Administration Review*, *76*(2), 241–251. https://doi.org/10.1111/puar.12435

Guerrero-Rosada, P., Weiland, C., McCormick, M., Hsueh, J., Sachs, J., Snow, C., & Maier, M. (2020). Null relations between CLASS scores and gains in children's language, math and executive function skills: A replication and extension study. *Early Childhood Research Quarterly*, *54*(1), 1–12.

Hanushek, E. A., Rivkin, S. G., & Schiman, J. C. (2016). Dynamic effects of teacher turnover on the quality of instruction. *Economics of Education Review*, *55*, 132–148.

Howes, C. (1999). Attachment relationships in the context of multiple caregivers. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 671–687). Guilford Press.

The Institute of Medicine & National Research Council. (2015). *Transforming the workforce for children birth through age 8: A unifying foundation*. The National Academies Press.

Johnson, S. M. (2006). *The workplace matters: Teacher quality, retention and effectiveness* [NEA Working Paper]. https://files.eric.ed.gov/fulltext/ED495822.pdf

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

Markowitz, A. J. (2019). *Within-year teacher turnover in Head Start and children's school readiness* [EdPolicyWorks Working Paper]. https://curry.virginia.edu/sites/default/files/uploads/epw/70_Teacher_Turnover_in_Head_Start.pdf

Markowitz, A. J., Bassok, D., & Hamre, B. (2018). Leveraging developmental insights to improve early childhood education. *Child Development Perspectives*, *12*(2), 87–92. https://doi.org/10.1111/cdep.12266

Phillips, D. A., Anderson, S., Datta, A. R., & Kisker, E. (2019). The changing portrait of center-based preschool teachers: 1990 and 2012. *Children and Youth Services Review*, *107*, Article 104558.

Pianta, R. C., La Paro, K. M., & Hamre, B. K. (2008). *Classroom Assessment Scoring System: Manual Pre-K*. Paul H. Brookes.

Redding, C., & Henry, G. T. (2018). New evidence on the frequency of teacher turnover: Accounting for within-year turnover. *Educational Researcher*, *47*(9), 577–593. https://doi.org/10.3102/0013189X18814450

Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. *American Educational Research Journal*, *50*(1), 4–36.

Sorensen, L. C., & Ladd, H. F. (2020). The hidden costs of teacher turnover. *AERA Open*, *6*(1), 1–24. https://doi.org/10.1177/2332858420905812

Totenhagen, C. J., Hawkins, S. A., Casper, D. M., Bosch, L. A., Hawkey, K. R., & Borden, L. M. (2016). Retaining early childhood education workers: A review of the empirical literature. *Journal of Research in Childhood Education*, *30*(4), 585–599.

Tran, H., & Winsler, A. (2011). Teacher and center stability and school readiness among low-income, ethnically diverse children in subsidized, center-based child care. *Children and Youth Services Review*, *33*(11), 2241–2252.

Vitiello, V. E., Bassok, D., Hamre, B. K., Player, D., & Williford, A. P. (2018). Measuring the quality of teacher–child interactions at scale: Comparing research-based and state observation approaches. *Early Childhood Research Quarterly*, *44*, 161–169.

Wells, M. B. (2015). Predicting preschool teacher retention and turnover in newly hired Head Start teachers across the first half of the school year. *Early Childhood Research Quarterly*, *30*, 152–159. https://doi.org/10.1016/j.ecresq.2014.10.003

Whitebook, M., McLean, C., & Austin, L. J. (2016). *Early childhood workforce index*. Center for the Study of Child Care Employment, University of California, Berkeley.

Whitebook, M., McLean, C., & Austin, L. J. (2018). *The workforce data deficit*. Center for the Study of Child Care Employment. https://cscce.berkeley.edu/files/2018/04/The-Workforce-Data-Deficit.pdf

Whitebook, M., Phillips, D., & Howes, C. (2014). *Worthy work, STILL unlivable wages: The early childhood workforce 25 years after the National Child Care Staffing Study*. Center for the Study of Child Care Employment, University of California, Berkeley.

Whitebook, M., & Sakai, L. (2003). Turnover begets turnover: An examination of job and occupational instability among child care center staff. *Early Childhood Research Quarterly*, *18*(3), 273–293.

Authors

DAPHNA BASSOK is an associate professor of education and public policy at the University of Virginia. She studies early childhood education policy.

ANNA J. MARKOWITZ is an assistant professor of human development and psychology at the School of Education and Information Sciences at the University of California, Los Angeles. Her work focuses on the ways in which policy effects the adults young children spend time with, and how this shapes children's cognitive, social, and emotional development, particularly for children in families who are low-income or otherwise marginalized.

LAURA BELLOWS is an IES postdoctoral fellow with the School of Education and Human Development at the University of Virginia. Her work focuses on how U.S. social policies relate to child outcomes.

KATHARINE SADOWSKI is a doctoral student in policy analysis and management at Cornell University. Her research interests are broadly the economics of education, natural language processing, and racial and gender disparities.

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