New America Education
Policy Brief

MAKING THE HOURS COUNT

Exposing Disparities in Early Education by Retiring Half-Day vs. Full-Day Labels

Alexander Holt

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INTRODUCTION

The education system in the United States is unable to track the amount of time that young children spend in school. This is largely due to the labels "full-day"and "half-day," loose terms that make it impossible to accurately determine the actual length of the school day. This lack of data masks significant disparities in children's access to early education.

There is no standard definition within the research or policy community of a half-day or a full-day program. In practice, a half-day program typically falls within a window of two to three and a half hours.[1] Even that definition is not entirely accurate. For instance, Missouri defines a "full-day" as any program operating at least three hours per day five days a week, or four hours per day, four days a week.[2] While the variation for full-day programs can be significant, most programs meeting that definition fall within a window of four to eight hours (which, of course, means one full-day program could be twice as long as another), and usually range from four to five days per week.

A half-day program may be 10 or 15 hours a week, while a full-day program may be 20, 30, or even 40 hours—as much as four times the amount of class time as a half-day program. Even within the half-day definition, a student in a two-hour half-day program versus a three and a half-hour half-day program can receive the equivalent of three fewer classes per week. That is, although two children in separate cities, counties, or school districts may both be enrolled in half-day programs, from the state's perspective, the child in a three and a half-hour program is provided with 50 percent more time for learning than her peer in a two-hour program.

"Half-day" and "full-day" terminology is also insufficient for demonstrating *cumulative* time. Some half-day programs are not available five days a week—they meet for only two and a half hours a day, four days a week, which is why many half-day programs add up to just 10 hours per week. Thus, even if there were standard definitions for half and full-day, they do not account for the actual quantity of time per week and per year, which are the most meaningful measurements. Current measures are inconsistent and inaccurate. It would be better to start speaking about hours.

Any government or organization that uses public revenue should be required to track and report the number of hours that children are enrolled in public pre-K and kindergarten. These organizations should also stop using the terms "half-day" and "full-day." Debates on the goals of early education policies should be oriented toward the idea of increasing children's opportunities to learn. Of course, more time does not inherently lead to more learning, But an increase in class time is one of the more obvious ways to increase meaningful opportunities to learn for young children.

Disparities in Dosage in States and Districts

Pre-Kindergarten

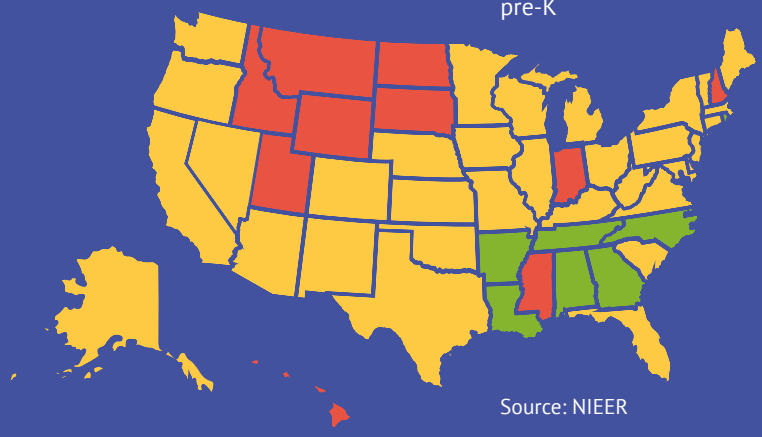
The National Institute for Early Education Research (NIEER), a research center at Rutgers University, asks states annually about the number of hours of operation per day and per week for their state-funded pre-K programs. Some programs are situated in school districts, while others operate outside of school districts. Of the 41 states and the District of Columbia that had state-funded pre-K programs in 2012, there were only seven states, plus Washington, D.C., in which all children in publicly funded pre-K were in school for at least six-hours per day.

Approximately 40 percent of school districts offer no public pre-K, according to recent data from the Office of Civil Rights in the U.S. Department of Education. Of the districts that do offer pre-K, 57 percent offer a "part-day" program, which is defined by the Office as less than six hours per day. Thirty percent offer only "full day," while the remaining 13 percent offer both. These data, made available for the first time this year, are valuable in part because they help reveal disparities in what researchers call "dosage."[3] Before this year, national data on public school pre-K was either non-existent or made no mention of the amount of time each week that children had the opportunity to participate in pre-K.

States with publicly-funded pre-K of at least six hours per day

States with publicly funded pre-K of less than six hours per day

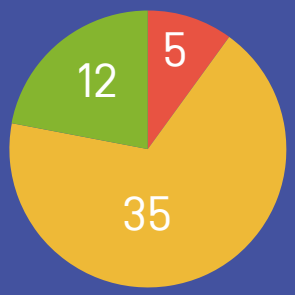
States without publicly-funded pre-K



Source: NIEER

Kindergarten

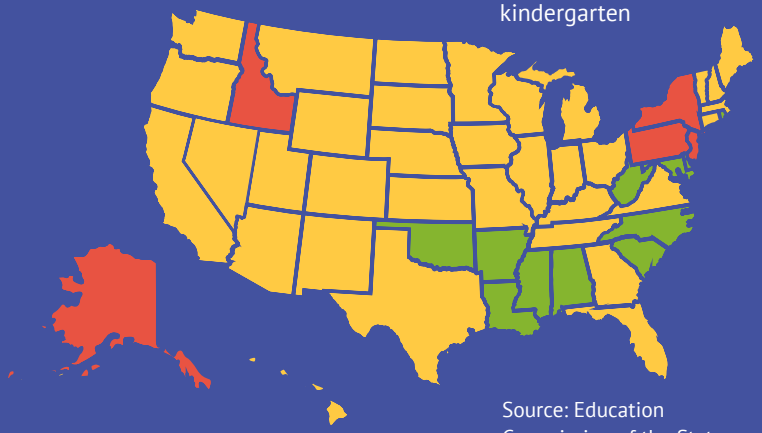
Only 11 states, plus the District of Columbia require that school districts offer at least five hours of kindergarten per day (and/or 900 hours per year) at no cost to the parent. Five states require no kindergarten in statute. No data are available—in part because states are not required to report it to the federal government—on how many districts provide five hours or more per day of kindergarten in the other states.



States with publicly-funded kindergarten of at least five hours per day

States with publicly funded kindergarten of less than five hours per day

States without publicly-funded kindergarten



Source: Education Commission of the States

A BRIEF HISTORY OF TIME IN SCHOOL

The wisdom of the 180 day-school year and six-hour school day in first through twelfth grade has largely gone unquestioned for well over a century, even as family structure, labor, sanitation, healthcare, consumer technology, brain science, and pedagogical research have all changed drastically.

The most recently available data show that the average school day nationally is 6.6 hours for elementary school students, with state averages ranging from 6.3 (Hawaii and Rhode Island) to 7.2 (Texas). The average number of days in a school year is 180, with the lowest state average 171 (Colorado) and the highest 184 (Florida).[5] The national average for total hours in a public school year is 1,195. Two-thirds of states are within 50 hours of that average, suggesting a remarkable level of consistency across the country for the first through 12th grades. Why such consistency? What research do we have that suggests this is the correct amount of time per day, or the correct number of days per year for these grade levels?

Education historians Joel Weiss and Robert Brown persuasively demonstrate that the basic time structure of a school day has barely changed since at least the 1850s, "the only difference being that the current structure has little of the flexibility of its ancestor."[6] That flexibility stemmed partially from the fact that it was atypical for the same students to come to class at the same time every day. Indeed, the great crusade of the latter half of the 19th century in schools was to get to a universal, consistent level of attendance, which happened to be the chief accountability metric of the time. Similar to current accountability metrics, school funding from the state or province was tied to high and consistent attendance.

Summer breaks are similarly disconnected from any research on what leads to improved student progress. Instead, the two-month summer break was solidified by the turn of the century, motivated by legitimate health concerns related to hot summers in urban environments before modern sewage and air conditioning. It was also codified based on misinformed ideas about brain development in children, such as the idea that children's brains could get too full or fatigued. Lastly, the prestigious secondary schools, which few children attended, already had longer summer breaks for their mainly wealthy and urban pupils.[7] Secondary schools were seen as more prestigious, and thus there was a drive to align primary school teachers' labor with that of secondary schools.[8]

Time structures are difficult to adjust once they become the norm. The last major update to our Western calendar occurred just under 500 years ago

Raising Arizona

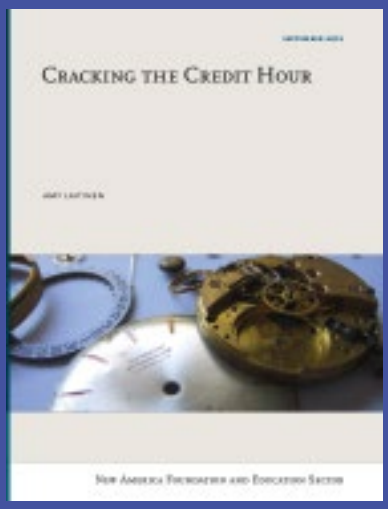
Earlier this year, New America released *Raising Arizona: Lessons for the Nation from a State's Experience with Full-Day Kindergarten* by C. J. Libassi, which took an in-depth look at Arizona's decision to rescind funding for full-day kindergarten. The report examines both the rationale and policy debates surrounding the decision, and the ways in which individual districts coped with the reduction in funding. Arizona is a clear case where the terms "half-day" and "full-day" managed to confuse the debate about the amount of time children could be enrolled in kindergarten.

Read More:
edcentr.al/raisingarizona

when the Gregorian calendar was instated, itself a minor change from the Julian calendar created 1500 years prior to that. But Weiss and Brown argue that time structures actually served as the "foundation on which the rest of the curriculum was based," and therefore, that ignoring time structure in discussions about curriculum is as flawed as if we were to ignore, say, what type of math is appropriate to teach an eight-year old.[9] The use of curriculum in pre-K and kindergarten has only recently become common practice, so it may feel jarring to apply Weiss and Brown's ideas to early education. But early educators are making decisions all the time that depend entirely on the hours they have available to provide literacy and math activities, engage children in conversations about new content areas, and help children explore the physical and social world.

This is the backdrop for the debate in early education over half-day versus full-day enrollment. The reason a first-grader is in school for six hours a day is because that is how we have always done it. Certainly complaining about how unfair path-dependence is will not get us very far, but it is worth noting that the "grammar of schooling," a phrase advanced by researchers David Tyack and William Tobin to refer to the tired and outdated ways we think about how school ought to be, has barely changed over the last century.[10] Indeed, without attempting to change that grammar, it is unlikely that any fundamental changes related to time will occur. This grammar is so ingrained that it even affects the questions researchers ask.

Higher Education and Early Education: Same Goal, Different Measures



Higher education is also grappling with the question of how to count the time students are in school. For example, Amy Laitinen, author of New America's paper *Cracking the Credit Hour,* has forcefully argued for shifting away from counting credit hours as proxies of student learning and creating a system to more accurately measure how much a student has learned, not whether that student has logged enough "seat time."

Early education should also be about more than seat time. In fact, seat time is the opposite of what is desired in these years when young children are bundles of energy, actively exploring. But that does not mean there should be no time measurements whatsoever.

The status quo is strangely flipped: higher education should focus less on time, and early education should focus more on it. In each case, the focus should be increasing opportunities to learn, but achieving that end looks different for each. Much of the push toward awarding credentials based on demonstrated mastery of a subject (rather than sitting in class for a certain amount of hours) stems from the fact that an increasing number of college students are older and have more life and work experience. In short, they have already put in the time to learn new things before they got to school. In higher education the issues of the labor force are opposite those that dominate debates in early education. Whereas enrolling children in school for longer periods of time helps parents enter the workforce, adult students need to get through college faster so that they can enter (or stay in) the workforce.

Access to pre-K and kindergarten, by contrast, depends on where families live and whether they must pay fees for early education. Some parents have few opportunities to enroll their children in pre-K of any quantity and are only able to enroll their children in low quantities of kindergarten, while in the bordering district or state, parents may be able to enroll their children in pre-K and kindergarten of high quantities. Yet our current system for reporting and labeling time in early education—that is, when there is a system at all—hides these differences by not specifying hours per week and year. Only by counting hours systematically can parents and policymakers start to make fair comparisons about children's access to opportunities to learn.

Read More: edcentr.al/credithour

RESEARCH BASE ON THE EFFECTS OF INSTRUCTIONAL TIME IN EARLY EDUCATION

In research, "dosage" is the term used to describe the quantity of time offered to children in child care, pre-K or kindergarten programs. Dosage can refer to hours, days, years, and more—whether children receive one year or two years of pre-K, or whether they are in programs that are open for two and a half hours per day, four hours per day, six hours per day, and so on. In studies that show a lasting positive impact of pre-K, dosage has varied widely, as has the curriculum or pedagogical approaches of the programs. This makes it virtually impossible to make generalizations about the effect of dosage alone.

Consider the now-classic HighScope Perry Preschool program, which started in 1962 and is cited for its impact on adult outcomes. In Perry, children received instruction at the ages of three and four for two and a half hours five days a week from October through May, with weekly one and a half hour home visits.[11] The program used the HighScope curriculum, which emphasizes "active participatory learning," where children are encouraged to engage with the environment and people around them as a way to learn and develop. In Abecedarian, another well-known program that ran in the 1970s, services began when the children were infants and continued through age five, five days a week, eight hours per day, 50 weeks per year.[12] That makes Abecedarian unique, both because of the high dosage and how early the intervention occurred in childhood. And in the Child-Parent Centers, a program launched in the Chicago Public Schools in the 1970s using federal Title I funds, children received a half-day or a full-day of pre-K depending on which school they were assigned. Instead of making a distinction based on dosage, researchers have highlighted results based on the comprehensiveness of the program.[13]

During the 1990s a separate strand of research began to develop which examined the effects of child care quantity on children grouped in the 0–5 age range. Unlike in the three classic pre-K studies highlighted above, these studies did not focus on programs designed explicitly as interventions to educate and prepare young children, but instead on programs more broadly defined as places where children were under some form of adult supervision during the day. Some of these studies found an increase in negative behavioral outcomes correlated to increased quantity of time in a program.[14] In 2002, the National Institute of Child Health and Human Development (NICHD) published a report that sought to compare the relative effects of three variables in child care for children ages 0–5 (quantity, quality, and type of setting) in order to attempt to isolate effects. Even after controlling for quality through data from multiple in-person observations of the interaction between the caregiver and the child, the study found that children who spent more time in child care (over 30 hours a week) had more behavioral problems than those who had fewer hours (10 or less).[15] Researchers also found the effect to be more pronounced for those children in low-quality parenting settings and from low-income families.[16] Since then, yet more studies have appeared that draw contradictory conclusions about the link between quantity of time and behavioral issues.[17] Research on children's development would suggest taking into account the possibility that quantity should be treated very differently for one-year olds versus five-year olds, yet some study designs treat all ages equally.

Researchers have also examined the time question by conducting meta-analyses, looking holistically at the results of multiple studies. Many of these reviews demonstrate that longer pre-kindergarten and kindergarten days in high-quality programs lead

to positive cognitive outcomes.[18] For example, a 2010 literature review stated that, "the most striking pattern of findings . . . is the increase in positive outcomes (and in some studies, decrease in negative outcomes) when children attend high quality early care and education program for more time."[19] Looking at kindergarten alone, a literature review conducted in 2008 found associations between full-day kindergarten and higher reading levels at the end of kindergarten. However, that association disappears as students progress to higher grades.[20]

None of this research is definitive, nor does it arrive at an ideal amount of time per day or per week for children to be enrolled in pre-K and kindergarten. It bears remembering that most of the current time-structure in K–12 (and even in higher education) is not empirically justified; it is a result of historical happenstance. Of course, we should continue to fund well-conceived research—but it is worth providing some context on the double standards involved. Clearly the amount of time needs to be accompanied by quality, as defined by good teaching and intentional design, such as curricula and other pedagogical approaches designed to promote learning. There may be a threshold of hours per week, for instance, where an increase in hours above a certain threshold leads to non-linear gains in cognitive outcomes. But it is unlikely researchers will find the golden number of hours isolated from other factors.

Why this Matters for the Teacher Workforce

Labels like "half-day" and "full-day" mask problems with the teacher workforce as well. When districts provide half-days of kindergarten, they may be requiring their teachers to teach two different classes of children each day: one in the morning and one in the afternoon. Not only does this confuse enrollment counts, it means that teachers are expected to monitor the progress of twice as many children as their counterparts in traditional full-day classrooms. As states and districts implement new systems for evaluating teachers, it will be important to recognize these differences at the kindergarten level. And as teachers begin to alter their instruction to match the Common Core State Standards for kindergarten, that instruction may differ greatly, depending on how many hours students may attend per day, per week, and per year.

TOWARDS OPPORTUNITIES TO LEARN ACROSS THE PREK–3RD GRADE SPECTRUM

Public education in the United States is designed to open up the chance for all children, regardless of family income level, to become educated, productive members of society.

As brain science and developmental science continue to show the importance of people's earliest years, it has become clear that all children, especially those in disadvantaged families, need to be given opportunities to learn. Using the opportunities-to-learn framework offers a flexible approach to acknowledging the variation of educational opportunity amongst different groups of young children.[21] In general, children of higher-income families are afforded greater opportunities to learn due to the ability of parents to purchase these opportunities (private pre-K, museum visits, summer camp, tutors, etc.), to forgo income in order to engage and create these opportunities, and because more income allows for stability and less chaos, leading to more opportunities to learn in the home in general.

Fewer opportunities in pre-K and kindergarten leave children with a poor start. It is easy to see the unfairness inherent in a system that provides some children access to, say, 30 hours of public pre-K and kindergarten per week and leaves other children with opportunities for 10 hours or fewer per week—or no such opportunities at all, as is often the case with pre-K.

A first step toward helping to reveal these disparities is to better understand which children are excluded. But the "half-day" and "full-day" language currently used by advocates and policymakers is obfuscating the issue, since there are multiple definitions of both. In fact, the use of "half-day" can have the effect of leading policymakers to consider a "half-day" a valid policy choice, even though "half-day" is not considered an option in other grades where time structures are based on even less research than those in early childhood. So long as the ECE community continues to debate the merits of full-day versus half-day, they will have allowed a framing of the issue that puts them on the defensive. The focus instead should be on whether children are only offered chances at a "low-quantity program" or "low-quantity" learning experience. Using hours will provide a neutral and clearly defined way for comparisons to be made.

In addition, as stated in recommendations at the end of this paper, instead of labels like "half-day" and "full-day," data collection should focus on the number of hours per week and per year. More specifically, any government or organization that uses public revenue to fund education should be required to report the number of hours per week and hours per year that children have the opportunity to attend publicly funded pre-K and kindergarten in their corresponding jurisdictions.[22]

As Weiss and Brown point out, the history of public school education has been the push to provide *everyone* with sufficient opportunities to learn.[22] Time in a classroom does not guarantee opportunities to learn, but it is a necessary doorway to that opportunity. Children, especially low-income children, need more opportunities to learn, by being in a classroom for longer so they will also allow families to afford more opportunities to learn outside the classroom. Quantity of time is also important in enabling parents to work, leading to higher incomes, which will also lead to more opportunities to learn. And, of course, for these opportunities to be meaningful, the time in the classroom must be full of high-quality interactions with trained and experienced professionals.

For policymakers and parents to identify disparities in opportunities to learn between different areas and demographic groups, states need to start tracking the number of hours that young children are enrolled in public pre-K and kindergarten. It is important to know where the deficiencies are occurring. By shifting the rhetoric towards hours per week, early education advocates will have the upper hand in the debate about expanding access that will fold neatly into the opportunities-to-learn framework. It is time to change the way we speak and think about time in public education, and early education is a good place to start.

RECOMMENDATIONS

This paper is a follow-up to *Counting Kids and Tracking Funds in Pre-K and Kindergarten*, a 2012 report that exposed major problems in data gathering in early education. We found that even the most basic information on public pre-K and kindergarten, such as funding and enrollment, is difficult or impossible to collect.

This paper focuses on the detrimental effects of our current framing of, and therefore measurement of, time in school. It argues for the following changes to ensure increased equity in opportunities to learn across the PreK–3rd spectrum of public education:

- Educators, policymakers, and data gatherers should abandon the language of "full-day" and "half-day" and instead measure quantity by hours per week and year.

- Any government or organization that uses public revenue to fund education should be required to report publicly and to the federal government the number of hours per week and hours per year that children have the opportunity to attend publicly funded **pre-K** in their jurisdictions.

- Any government or organization that uses public revenue to fund education should be required to report publicly and to the federal government the number of hours per week and hours per year that children can be enrolled in **kindergarten** in their jurisdictions.

NOTES

1 This is based on both state definitions, and those of third-party organizations such as the National Institute for Early Education Research.

2 Children's Defense Fund, Full-Day Kindergarten in Missouri (2013). http://www.childrensdefense.org/child-research-data-publications/data/state-data-repository/full-day-k/2013-missouri-full-day-k.pdf

3 U.S. Department of Education Office of Civil Rights, Data Snapshot: Early Childhood Education (2014). http://www2.ed.gov/about/offices/list/ocr/docs/crdc-early-learning-snapshot.pdf

4 Children's Defense Fund, The Facts About Full-Day Kindergarten (2014). http://www.childrensdefense.org/child-research-data-publications/data/the-facts-about-full-day.pdf

5 Average number of hours in the school day and average number of days in the school year for public schools, by state: 2007–08. Schools and Staffing Survey. Retrieved from the National Center for Education Statistics. http://nces.ed.gov/surveys/sass/tables/sass0708_035_s1s.asp. Colorado has a relatively long school day (7 hours) and Florida a shorter day (6.4 hours), making the total quantity of time similar to one another.

6 J. Weiss and R. Brown, Telling Tales Over Time: Calendars, Clocks, and School Effectiveness (Rotterdam: Sense Publishers, 2013), 18.

7 Contrary to popular belief, summer vacation was not pushed by rural communities, nor was it used to accommodate agrarian communities, according to Weiss and Brown. Ironically, rural, agrarian communities opposed the long summer holiday because it was one of the only times their children could attend (spring and fall were for planting and harvesting, and winter snow often made the long commutes impossible for children to get to school). Indeed, urban centers, with health crises often popping up in the summer months and a society increasingly in favor of more leisure actually imposed summer vacation policy on rural counties.

8 Weiss & Brown, Telling Tales. 34, 44-46.

9 Ibid., 15.

10 Ibid., 24.

11 L. J. Schweinhart, "Benefits, Costs, and Explanation of the High/Scope Perry Preschool Program" (paper presented at the meeting of the Society for Research in Child Development, Tampa, FL, 2003). http://www.highscope.org/file/Research/PerryProject/Perry-SRCD_2003.pdf

12 F. A. Campbell and C. T. Ramey, "Effects of Early Education on Intellectual and Academic Achievement: A Follow-Up Study of Children from Low-Income Families," Child Development 65.2 (1994): 684-698. http://www.cckm.ca/ChildCare/pdf/Campbell1994.pdf

13 http://www.sciencemag.org/content/333/6040/360.full

14 J. Belsky, "Quantity of Nonmaternal Care and Boys' Problem Behavior/Adjustment at 3 and 5: Exploring the Mediating Role of Parenting," Psychiatry: Interpersonal and Biological Processes 62 (1999): 1-20; and R. Clark, J. Hyde, M. Essex, and M. Klein, "Length of Maternity Leave and Quality of Mother-Infant Interactions," Child Development 68 (1997): 364-383.

15 NICHD Early Child Care Research Network, "Early Child Care and Children's Development Prior to School Entry: Results from the NICHD Study of Early Child Care," American Educational Research Journal 39.1 (2002): 133-164. http://www.jstor.org/stable/3202474

16 Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, "Quality Dosage, Thresholds, and Features in Early Childhood Settings: a Review of the Literature," Washington, DC: OPRE, 2011-5: 17. After mentioning the NICHD study, the authors state that "the majority of studies have found associations with extent of exposure to ECE of high-quality and cognitive or socioemotional outcomes."

17 E. Vortruba-Drzal, R. L. Coley and P. L. Chase-Lansdale, "Child Care and Low-Income Children's Development: Direct and Moderated Effects," Child Development 75 (2004): 296-312; and K. McCartney, M. R. Burchinal, A. Clarke-Stewart, K. L. Bub, M. T. Owen, J. Belsky, and NICHD Early Child Care Research Network, "Testing a Series of Causal Propositions Relating Time in Child Care to Children's Externalizing Behavior," Developmental Psychology 46.1 (2010): 1-17.

18 G. Camilli, S. Vargas, S. Ryan, and W. S. Barnett, "Meta-Analysis of the Effects of Early Education Interventions on Cognitive and Social Development," Teachers College Record 112.3 (2010): 579-620; and M. Zaslow, R. Anderson, Z. Redd, J. Wessel, L. Tarullo, and M. Burchinal, "OPRE. "Quality Dosage

19 OPRE. "Quality Dosage.": 18.

20 A. Lash, S. Bae, V. Barrat, E. Burr, and T. Fong, "Full-Day Kindergarten and Student Achievement: A Literature Review," REL West Technical Assistance Response (2008). http://relwest-archive.wested.org/system/research_attachments/30/attachments/original/RELW_TA_Report_FDK_rev20120207.pdf. See also P. DeCicca, "Does Full-Day Kindergarten Matter? Evidence from the First Two Years of Schooling," Economics of Education Review 26 (2007): 67-82.

21 Defined as children being "exposed to an educational environment that allows them to learn the 'espoused curriculum,' and in a broader sense, to learn in a variety of situations." Weiss and Brown, Telling Tales, 129.

22 A similar proposal was made in both the House and Senate versions of the Strong Start for America's Children Act of 2013 (H.R. 3461 and S. 1697), the bills that mirrored President Obama's proposal for expanding access to pre-K. The bill calls for reporting "the number of operational minutes per week and per year for each eligible local entity that receives a subgrant".

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