Continuity and Change in Low-Income Children's Early Learning Experiences Across the School Transition: A Comparison of Head Start and Kindergarten Classrooms

Tashia Abry, Michelle Taylor, Manuela Jimenez, Megan E. Pratt, and Jennifer LoCasale-Crouch

Abstract In this chapter, we leverage the nationally representative Head Start Family and Children's Experiences Survey (FACES) to provide a US population-based description of prekindergarten and kindergarten learning experiences among an economically disadvantaged group: 4-year-old children attending Head Start. We begin by introducing Head Start as a federal initiative to support the school readiness of low-income children. We then highlight emerging evidence of benefits associated with continuity in supportive educational experiences across early schooling. After a brief overview of the FACES data, we describe structural elements (i.e., programmatic infrastructure or design elements) and process-related elements (i.e., direct interactions among individuals or between individuals and learning activities) of children's learning experiences, focusing on areas of continuity and change across the 2 years. Findings highlight strengths of children's Head Start and kindergarten experiences while revealing areas of discontinuity across the transition that may be targeted to bolster Head Start children's school readiness and adjustment. These patterns also speak to the role of early education policy in promoting high-quality early learning experiences for low-income children across preschool and kindergarten years.

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Mounting evidence of the social and economic value of early intervention has spurred increased investments in early education programs in recent decades, including the US federally funded Head Start preschool program. Head Start, designed to provide high-quality early education and support services to economically disadvantaged children and families, is offered in direct response to a large and growing body of research underscoring the importance of supportive structures and processes in early schooling, particularly for low-income children (NICHD ECCRN, 2002a, 2002b; Phillips et al., 2017; Pianta, La Paro, Payne, Cox, & Bradley, 2002). Despite ongoing quality improvement and standardization efforts, there remains substantial variability across Head Start centers and classrooms, meaning children are likely to have very different learning experiences while attending Head Start (Walters, 2015). These children then matriculate into kindergarten classrooms that also reflect a diverse range of structures and processes (Bassok, Latham, & Rorem, 2016; Early, Pianta, & Cox, 1999; La Paro et al., 2009). Because Head Start largely operates independent of the public K-12 education system, there is little systematic oversight provided by either institution to monitor or promote the continuity or alignment of children's learning experiences across the school transition. Discontinuity between Head Start and kindergarten experiences likely undermines the benefits of high-quality preschool, given the importance of children's experiences before, during, and after the prekindergarten year and growing evidence that continuous exposure to supportive learning environments is critical to sustain and amplify early gains (Phillips et al., 2017; Reynolds, Magnuson, & Ou, 2010).

These points highlight a need to better understand what low-income children are experiencing in Head Start and beyond, as well as the degree of consistency in their experiences across the school transition. In this chapter, we leverage the nationally representative Head Start Family and Children's Experiences Survey (FACES) to provide a US population-based description of prekindergarten and kindergarten learning experiences among an economically disadvantaged group: 4-year-old children attending Head Start. We begin by introducing Head Start as a federal initiative to support the school readiness of low-income children. We then highlight emerging evidence of benefits associated with continuity in supportive experiences across early schooling. After a brief overview of the FACES data, we describe structural elements (i.e., programmatic infrastructure or design elements) and process-related elements (i.e., direct interactions among individuals or between individuals and learning activities) of children's learning experiences, focusing on areas of continuity and change across the 2 years. We conclude with a synthesis of observed patterns and discussion of potential implications in the context of current early education policy.

Head Start as a Context to Support Early Learning Among Low-Income Children

Early childhood is a developmental period of great plasticity and transformation when children are especially responsive to deficits and affordances in their environment, such as supportive learning experiences (Blair, 2002; Kaufman, Kaufman, & Nelson, 2015). This is especially true for economically disadvantaged children who often face a constellation of risk factors that impede their initial school readiness and lead to early gaps in academic and social-emotional learning that are likely to persist or widen over time in the absence of intervention (Bradley & Corwyn, 2002; Heckman, 2006; McClelland, Acock, & Morrison, 2006; Stipek & Ryan, 1997). There is widespread consensus that low-income children benefit from preschool attendance and supportive early learning experiences to a greater extent than their more advantaged peers, making high-quality preschool and other early educational programming critical to closing early poverty-related gaps and enhancing developmental trajectories (Bassok, 2010; Dearing, McCartney, & Taylor, 2009; Geoffroy et al., 2010; Keys et al., 2013; Magnuson, Meyers, Ruhm, & Waldfogel, 2004; Peisner-Feinberg et al., 2001; Reynolds, Temple, Robertson, & Mann, 2001; Schweinhart & Weikart, 1997; Winsler et al., 2008).

Launched in 1965 as part of President Johnson's War on Poverty, the Head Start preschool program reflects a long-standing federal effort to compensate for social and economic inequalities and promote school readiness among low-income children through the provision of no-cost high-quality early education, health, and family well-being services. With annual appropriations authorized by congress, Head Start is administered by the Department of Health and Human Services (DHHS) Administration for Children and Families which awards federal grants to public agencies, school systems, non- and for-profit organizations, and tribal governments to support Head Start programming in localities across the nation. Since its inception, congressional appropriations for Head Start and corresponding enrollments have risen exponentially. To date, Head Start has served over 33 million children and their families, with over 8 billion federal dollars allocated to serve 1 million children in 2016 alone (U.S. DHHS, 2016a). Although we focus this chapter on 4-year-old children's prekindergarten year in the Head Start preschool program, extensions exist including Head Start serving 3-year-olds, Early Head Start (for infants, toddlers, and pregnant women), the American Indian and Alaskan Natives program, and the Migrant and Seasonal Head Start program (U.S. DHHS, 2016a).

Through multiple congressional reauthorizations, Head Start has evolved over time, with particular attention in recent years to improving program quality (e.g., aligning school readiness goals with state learning standards, raising teacher qualifications). Most recently, Head Start promoted more rigorous standards of effective teaching and expanded program duration with the goal of moving to a full-day, full-year model (U.S. DHHS, 2016b). There is some evidence these efforts have been successful. Compared to children who would otherwise attend non-center-based

care (e.g., home care), children attending Head Start have a significant academic advantage at school entry (Feller, Grindal, Miratrix, & Page, 2016; Kline & Walters, 2016), with children at the lower end of the skill distribution experiencing the greatest benefits (Bitler, Hoynes, & Domina, 2014).

Continuity in Children's Early Learning Experiences

Despite evidence of short-term benefits associated with Head Start and other preschool programming, there is little empirical evidence of longer-term impacts (Lipsey, Farran, & Hofer, 2015; Phillips et al., 2017; Puma et al., 2012). For example, documented patterns of "fade out" have been attributed in part to children's movement from higher-quality preschool classrooms to less supportive classrooms in later grades (Lee & Loeb, 1995). This has led stakeholders to seek strategies to help maximize and sustain the benefits of children's early education experiences, and consequently, better capitalize on public investments (Heckman & Masterov, 2007).

Indeed, a growing body of research points to continuity as a promotive factor in children's learning and development that may be especially beneficial to low-income children (Abry, Latham, Bassok, & LoCasale-Crouch, 2015; Bogard & Takanishi, 2005; Reynolds et al., 2010; Takanishi, 2010). Continuity can be defined as the similarity, complementarity, coordination, or sequencing of educational components from grade to grade and has been examined in intervention and nonintervention settings (Bogard & Takanishi, 2005). For example, model early education programs such as the Carolina Abecedarian Project and the Chicago Child-Parent Center and Expansion Program provided low-income children with purposefully sequenced curricula and comprehensive education services across early schooling. Children who attended programming for multiple years outperformed those who attended fewer years on measures of academic achievement (Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002; Reynolds & Temple, 1998).

Studies of naturally occurring variability in continuity have found similar support. For example, US children who experienced a full set of continuity features across the prekindergarten and early elementary years (e.g., following preschool with full-day kindergarten, low school mobility, advanced teacher certification, high levels of literacy and math instruction, and high levels of parent involvement) had better academic and school engagement outcomes, and fewer incidents of grade retention and special education placement compared to those experiencing only some or none of the features (Reynolds et al., 2010). Moreover, these effects were the most pronounced among low-income children. Studies of schools' use of preschool-to-kindergarten transition practices offer additional support for efforts to promote continuity. For example, children whose prekindergarten and kindergarten teachers met and shared information regarding individual children or curricular issues had higher ratings of social skills and lower ratings of problem behavior in kindergarten than children whose teachers did not engage in these

practices (LoCasale-Crouch, Mashburn, Downer, & Pianta, 2008). Although the underlying mechanism is unclear, such practices likely promote continuity in instruction and care.

Taken together, research evidence suggests that continuity in supportive learning experiences across early learning settings can be an effective lever to promote and sustain early developmental gains, particularly for economically disadvantaged children. Thus, findings that indicate generally low levels of naturally occurring consistency in children's schooling experiences are concerning. Researchers have documented notable differences from preschool to kindergarten including decreases in provisions for learning and amount of time spent in science, social studies, and free choice/centers, as well as increases in the amount of time spent in language/literacy, math, small groups, and whole groups (La Paro et al., 2009). In some cases, similar average ratings of classroom quality (i.e., emotional, organizational, and instructional) across years masked discontinuities in individual children's learning experiences (e.g., no more than 12% of children experienced the highest quality in both years). In sum, there is reason to expect marked discontinuity in individual children's experiences across prekindergarten and kindergarten settings, even when average levels suggest similarities across the two contexts.

Study Objectives and FACES Data

Although evidence indicates the unique importance of continuous supportive early learning experiences for children from economically disadvantaged families, there has not been a recent in-depth description of low-income children's learning experiences on either side of the prekindergarten to kindergarten transition. To address this gap, we describe the prekindergarten and kindergarten learning experiences of children attending Head Start, with an eye toward areas and patterns of continuity and change across the 2 years. We examine structure- and process-related elements of children's learning experiences that have documented links to school readiness and adjustment outcomes for low-income children and are part of the policy dialogue regarding early childhood education quality and accountability. As structural elements, we examine teachers' level of education and years of teaching experience, class size and teacher-child ratio, and length of school day (i.e., full-day/part-day). As process elements, we examine the frequency of literacy and math instruction, amount of recess/outdoor activities, parent satisfaction with school communication practices, and schools' transition practices. For each element, we describe average experiences in Head Start and kindergarten and child-level patterns of change utilizing data from the Head Start Family and Child Experiences Survey.

The Family and Child Experiences Survey (FACES) was launched by the Administration for Children and Families in 1997 to gather information on the characteristics, experiences, and development of Head Start children and families, as well as the characteristics of Head Start and kindergarten teachers and programs. Each of five FACES cohorts, recruited from across the USA every 2 years from

1997 to 2009, comprises a nationally representative sample of 3- and 4-year-old children (and their families, Head Start teachers, classrooms, centers, and programs) entering Head Start for the first time in the fall of their cohort year. Given our aim to provide the most current description possible of children's learning experiences as they transition from Head Start into kindergarten, we utilize the 2009 cohort and focus on 4-year-old children's experiences in their prekindergarten year directly preceding their entrance into kindergarten. For approximately half of children, this was their second year in Head Start because they entered as 3-year-olds. We used data collected in the fall and spring of the prekindergarten year (reported by Head start teachers, center directors, and parents) and at the end of the following kindergarten year (reported by kindergarten teachers and parents). When describing sample characteristics and average experiences, we report results at the level of data collection (typically teacher/classroom) and employ weights to provide nationally representative estimates. When describing patterns of change across years, we report results at the child-level for those children who had data at both time points (these results are unweighted, as there is not a recommended weight available for these comparisons). Detailed information on FACES design, methodology, and instrumentation is available at https://www.acf.hhs.gov/opre/research /project/head-start-family-and-child-experiences-survey-faces.

In total, we describe the learning experiences of 2331 children (50% female), as reported by their Head Start teachers (n = 468), center directors (n = 129), and kindergarten teachers. The 2009 cohort was evenly split between children that entered the FACES data collection at 3 or 4 years of age (M age = 47 months; range = 32–60 months). Most children in the sample identified as Hispanic/Latino (39%), followed by African-American, non-Hispanic (32%) and White, non-Hispanic (21%). Head Start and kindergarten teachers were almost all female (99% and 98%, respectively) and of similar ages (Head Start M = 41 years, SD = 11; kindergarten M = 42, SD = 11). Head Start teachers were primarily White, non-Hispanic (55%) and African-American (32%), with 20% reporting Hispanic/Latino ethnicity. Kindergarten teachers were primarily White, non-Hispanic (82%) and African-American (11%), with 14% reporting Hispanic/Latino ethnicity.

Head Start Children's Prekindergarten and Kindergarten Learning Experiences

Teacher Education and Years of Teaching Experience Current Head Start standards require at least half of lead teachers nationally to have a bachelor's degree or above in early childhood education (or related field with preschool teaching experience; U.S. DHHS, 2007), with recent nationwide estimates at 55% (Bassok, 2013). Standard eligibility requirements for public kindergarten teachers are a bachelor's degree, usually in early childhood or elementary education, but nearly half of US public elementary school teachers have obtained a master's degree (U.S. Department of Education, National Center for Education Statistics, 2011–2012a).

In our sample, less than one-half of children's Head Start teachers had obtained a bachelor's (36%) or a master's (11%) degree (the remaining 53% having obtained an associate's degree or less). Contrastingly, all of children's kindergarten teachers had obtained either a bachelor's (49%) or master's (51%) degree. At the child-level, 49% of children had a teacher with at least a bachelor's degree in both Head Start and kindergarten. Not surprisingly, discontinuity was most often reflected as an increase in teacher education from Head Start to kindergarten (73% of children). Only 2% of children experienced a decrease in teacher education (Table 1). Patterns differed slightly in regard to teachers' experience. On average, children's Head Start and kindergarten teachers had similar years of teaching experience (13 and 14 years, respectively). However, there was notable discontinuity for individual children (Table 1), with numbers split across children moving into kindergarten classrooms with more experienced teachers (45% of children), less experienced teachers (36% of children), and those experiencing no substantive change (20% of children). Just over one-third of children had a teacher with 10 or more years of teaching experience in Head Start and kindergarten.

Class Size and Teacher-Child Ratio Head Start mandates a maximum class size of 20 children and maximum teacher-child ratio of 1:10 (U.S. DHHS, 2016b). Class size and ratio limits in the public elementary school system are much less consistent. Specifically, only about one-half of the USA specify a class size limit and fewer specify a teacher-child ratio standard (Education Commission of the States, 2009, 2014; U.S. Department of Education, 2011–2012b).

Findings from our sample appeared to reflect this inconsistency. On average, Head Start children's class sizes and teacher-child ratios increased from prekindergarten to kindergarten. Class size increased by an average of 4 children, from 17 children per classroom in prekindergarten to 21 per classroom in kindergarten. Additionally, the average teacher-child ratio increased by five children per teacher, from 1:8 in prekindergarten to 1:13 in kindergarten. In terms of continuity for individual children (Table 1), 49% of children attended a classroom of 20 children or less in both prekindergarten and kindergarten, and 36% attended a classroom with a teacher-child ratio of 1:10 or less in both years. Discontinuity was, as expected, most often reflected in an increase from prekindergarten to kindergarten in class size (57% of children) and teacher-child ratio (62% of children).

Program Day Length (Full-Day/Part-Day) A substantial number of children attend part-day programs in one or both of their prekindergarten and kindergarten years. National estimates indicate that 63% of Head Start programs provide full-day programming (Walters, 2015), whereas 70% of children are in full-day kindergarten classrooms (U.S. DOE NCES, 2017).

Indeed, in our sample, 57% of Head Start teachers reported full-day programming. The remaining teachers reported they worked in either part-day (39%) or home-based programs (4%). This variability decreased substantially when looking at kindergarten classrooms, in which the percentage of teachers reporting full-day programming grew to 88%. In terms of continuity for individual children, 55% of

Table 1 Child-level changes in learning experiences from Head Start to kindergarten

	Percent of children (N = 1590–1711):		
	Bachelor's degree or above in HS and K	Decreasing from HS to K	Increasing from HS to K
Teacher level of education	49	2	73
	10 or more years in HS and K		
Years of teaching experience (raw)	36	43	53
Years of teaching experience (categorical)	32	36	45
	20 or less in HS and K		
Class size	50	8	57
	10:1 or less in HS and K		
Teacher-child ratio	36	7	62
	Full-day in HS and K		
Program day length (half/part-day)	55	3	33
Literacy topics	*Taught every day in HS and K*		
Letter names	66	12	19
Writing letters	49	16	28
New words	55	17	22
Phonics	60	4	33
Listen to stories with print	68	19	10
Listen to stories, no print	11	20	50
Retell stories	14	31	24
Print conventions	56	14	24
Write name	81	2	16
Rhyming words/word families	18	21	37
Common prepositions	13	39	20
Math topics			
Count out loud	77	12	9
Geometric manipulatives	13	61	9
Counting manipulatives	24	42	15
Math-related games	16	41	19
Measuring instruments	2	64	11
Calendar-related activities	76	4	19
	More than 30 min in HS and K		
Daily recess/outdoor time	7	67	10
Communication practices (satisfaction)	*Done very well in HS and K*		
Reports on child	74	13	11

(continued)

Table 1 (continued)

	Percent of children (N = 1590–1711):		
	Bachelor's degree or above in HS and K	Decreasing from HS to K	Increasing from HS to K
Provides developmental information	64	21	11
Communicates chances to volunteer	67	15	14
Provides home-learning information	67	17	11
	Four or more offered in HS and K		
Transition practices offered (number of)	28	92	3

Head Start children were enrolled in a full-day program in both their prekindergarten and kindergarten years, whereas 10% were enrolled in a part-day program both years (Table 1). About one-third of children moved from part-day prekindergarten to full-day kindergarten, and a small contingent (3% of children) moved from full-day prekindergarten to part-day kindergarten.

Frequency of Literacy and Math Activities Over time, both Head Start and kindergarten classrooms have seen a shift in instructional focus toward academic skills. For Head Start, this shift was motivated by the Head Start Act of 2007, which raised academic standards alongside standing goals to support social-emotional and physical development (U.S. DHHS, 2007). For kindergarten classrooms, the shift has involved a gradual academicization over the last 20 years in which teachers have increased the amount of time spent on advanced language/literacy and math topics and activities (Bassok et al., 2016). In this light, expectations regarding (dis)continuity in children's literacy and math experiences were less clear than teacher qualifications and class size, for example.

Literacy With literacy, we found that for most topic/activity areas, the majority of Head Start teachers reported engaging in *daily* literacy instruction (M = 62%; range = 26–88%; Fig. 1). In kindergarten the percent of teachers reporting daily frequency trended even higher (M = 67%; range = 27–97%), indicating that on the whole, children had *more frequent* exposure to these literacy topics/activities once in kindergarten. The literacy activities with the largest increases of teachers reporting every day frequency from Head Start to kindergarten tended to be more advanced concepts including *listening to stories without print exposure* (73% increase), *phonics* (37% increase), and *rhyming words* (32% increase). The exceptions in which more Head Start than kindergarten teachers reported daily instruction were *common prepositions* (41% decrease) and *retelling stories* (24% decrease).

As hypothesized, many children experienced consistency in the frequency of literacy instruction across years, and in many cases it was consistent daily exposure (Table 1). Averaging across the 11 topics, 45% of children experienced daily literacy

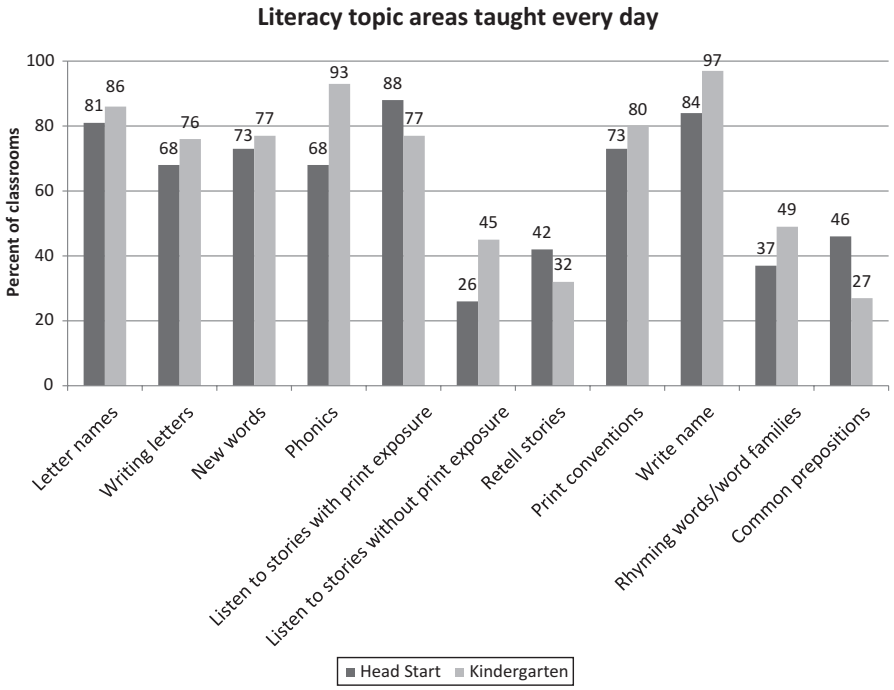

Fig. 1 Percent of teachers reporting daily instruction of literacy topic areas in Head Start and kindergarten

instruction in prekindergarten and kindergarten (range = 11–81%). The topic areas with the highest percentage of children experiencing daily frequency in both years were *write name* (81% of children), *listen to stories with print exposure* (68% of children), and *letter names* (66% of children). Topic areas with the least children experiencing consistency in daily frequency were *listen to stories with no print exposure* (11% of children), *common prepositions* (13% of children), and *retell stories* (14% of children). Instances of inconsistency were more commonly seen in increases rather than decreases in instructional frequency from Head Start to kindergarten, with the greatest number of children experiencing increases in *listening to stories without print exposure* (50% of children) and *rhyming words* (37% of children). Three exceptions in which more children decreased than increased in frequency were *common prepositions* (39% of children), *retell stories* (31% of children), and *listen to stories with print exposure* (19% of children).

Math The patterns observed for math instruction paint a different picture (Fig. 2). Like literacy, a substantial percentage of Head Start teachers reported daily instructional frequency of math topics (M = 67%; range = 39–91%). However, unlike literacy, the percentage of kindergarten teachers reporting daily math instruction was typically lower (M = 46%; range = 5–95%), indicating that on average, children had *less frequent* exposure to these math topics/activities once in kindergarten. The math

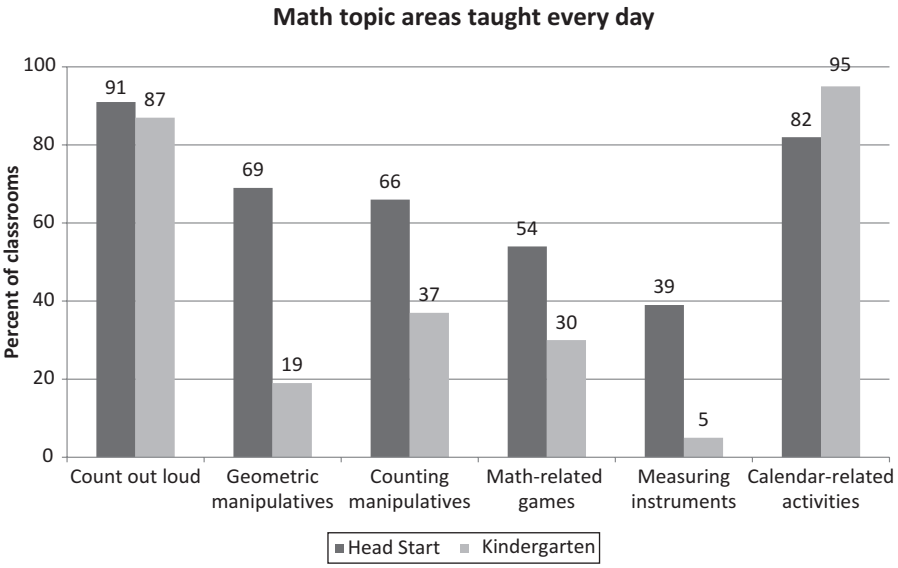

Fig. 2 Percent of teachers reporting daily instruction of math topic areas in Head Start and kindergarten

activities with the largest decreases in the number of teachers reporting daily instructional frequency were *measuring instruments* (87% decrease), *geometric manipulatives* (72% decrease), *counting manipulatives* (44% decrease), and *math-related games* (44% decrease). The one exception in which more kindergarten than Head Start teachers reported daily instruction was *calendar-related activities* (16% increase).

Compared to literacy, fewer children experienced daily math instruction across years (Table 1). Averaging across six math topic areas, 35% of children experienced daily math instruction each year (range = 2–77%). The two topic areas in which the most children experienced daily instruction in both years were *count out loud* (77% of children) and *calendar-related activities* (76% of children). The remainder of the topic areas provided a stark contrast with only 2% (for *measuring instruments*) to 24% (for *counting manipulatives*) of children experiencing daily math instruction in both years. Instances of change across years were most commonly observed as decreases rather than increases in instructional frequency from prekindergarten to kindergarten, with the greatest percentage of children experiencing decreases in *measuring instruments* (64% of children) and *geometric manipulatives* (61% of children). The one exception in which more children increased than decreased in frequency was *calendar-related activities* (19% increasing of children).

Recess Specific guidelines for preschoolers and elementary-aged children proposed by the US DHHS and supported by the National Association for the Education of Young Children advocate at least 60 min per day of structured physical activity

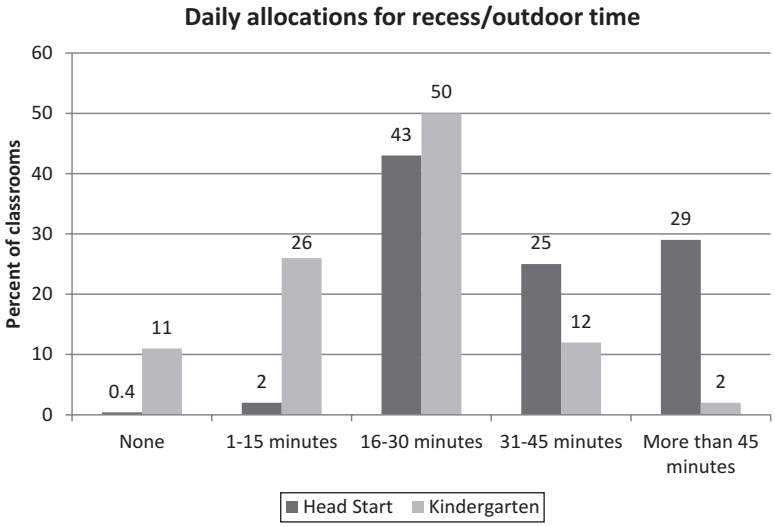

Fig. 3 Daily recess/outdoor time allocations in Head Start and kindergarten

and between 60 and 180 min per day in unstructured physical activity (Society of Health and Physical Educators, 2016). Additionally, it is recommended that all elementary children be provided with at least one daily recess period of at least 20 min (National Association for Sport and Physical Education, 2006). Indeed, Head Start highlights physical development and health as one of the essential domains of school readiness included in its Child Development and Early Learning Framework, and recess appears common in US kindergarten classrooms, with the majority of kindergarten teachers reporting that their children typically have daily recess (Bassok et al., 2016). This information suggests that children may have daily allocations for recess in Head Start and kindergarten, but does not indicate how much daily time is being allotted, thus making it difficult to anticipate specific patterns of (dis)continuity across the two contexts.

We found that almost all Head Start teachers reported some daily recess/outdoor allowance in prekindergarten (Fig. 3), with 98% of teachers reporting more than 15 min per day spent in recess/outdoor time and 54% reporting more than 30 min per day. In kindergarten, fewer teachers (89%) reported some daily recess/outdoor time, and the distribution of allocated time shifted substantially: Approximately 64% of teachers reported more than 15 min per day spent in recess/outdoor time, and only 14% reported more than 30 min. The most dramatic shifts were in the *none* category (2,650% increase), *1–15 min* range (1,200% increase), *more than 45 min* range (93% decrease), and *31–45 min* range (52% decrease). At the child-level, there was relatively little consistency across years (Table 1). Only 7% of children experienced more than 30 min of daily recess in both prekindergarten and kindergarten. Discontinuity was most often reflected in a decrease in recess time from

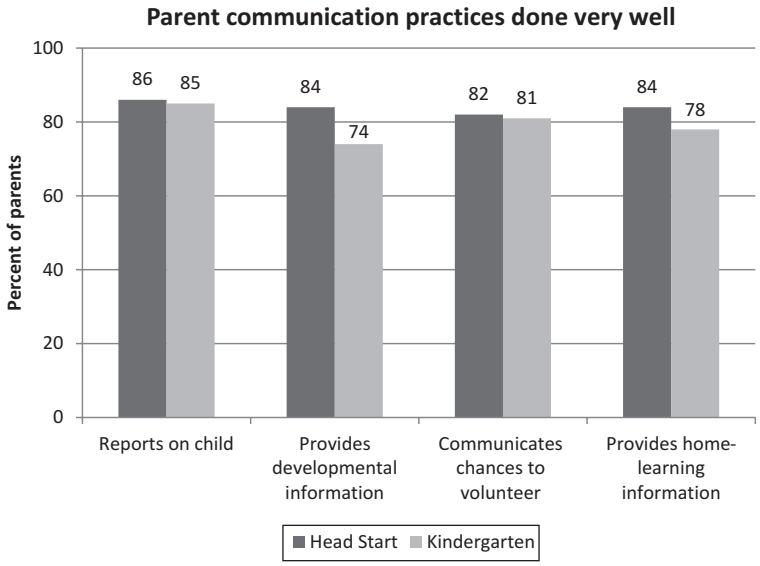

Fig. 4 Percent of parents who report highest level of satisfaction with school communication practices in Head Start and kindergarten

Head Start to kindergarten, with 67% of children moving to a kindergarten classroom with less recess/outdoor time and only 10% moving to a classroom with more recess/outdoor time.

Parent Communication and Transition Practices Head Start Performance Standards outline provisions for family engagement and school transition services (U.S. DHHS, 2016b). These efforts appear successful in that Head Start has demonstrated higher levels of parent involvement compared to other preschool programs (Fantuzzo, Tighe, & Childs, 2000; Rimm-Kaufman & Pianta, 1999). Parents continue to report high levels of interest in their children's education and development across the transition into kindergarten (McIntyre, Eckert, Fiese, DiGennaro, & Wildenger, 2007); however, the frequency of school-family communication appears to decrease once in formal schooling (Rimm-Kaufman & Pianta, 1999), and kindergarten teachers tend to utilize low-intensity and non-child-specific transition practices (e.g., sending flyers home, holding group open houses) to a greater extent than in-person or individualized practices shown to be more effective (e.g., home visits, phone calls; Pianta, Cox, Taylor, & Early, 1999; Schulting, Malone, & Dodge, 2005).

Parent Communication We found that parents' average satisfaction with school communication practices was quite high in both Head Start and kindergarten, with the majority of parents in each year reporting practices as done very well (Fig. 4). In Head Start, no fewer than 82% of parents stated a given practice was done very

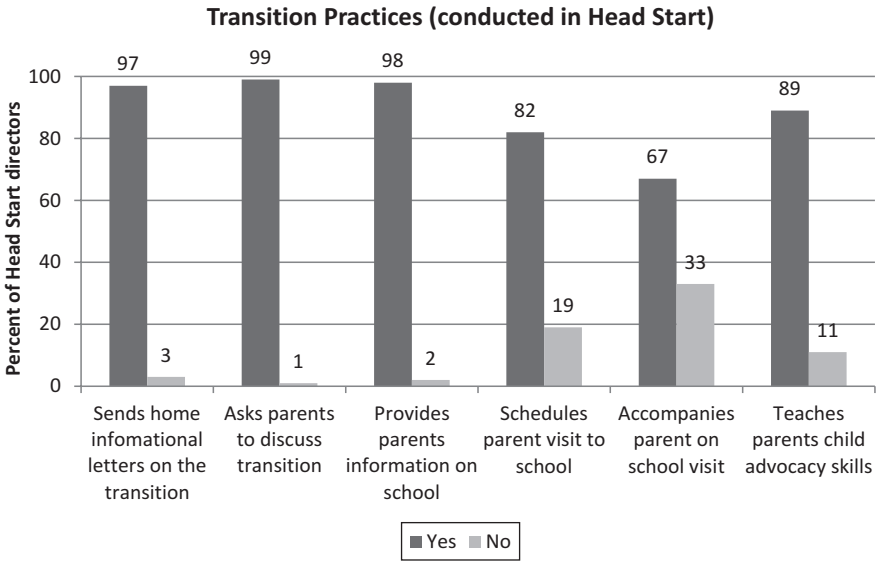

Fig. 5 Percent of Head Start center directors reporting use of kindergarten transition practices

well. This number dropped slightly in kindergarten to 74%. Although modest, changes from Head Start to kindergarten reflected a decrease in the number of highly satisfied parents across the transition, with the largest decreases in *provides developmental information* (12% decrease) and *provides home-learning information* (7% decrease). Given the high average ratings in each year, high levels of consistency for individual parents were not entirely surprising (Table 1). Averaging across the four practices, 68% of parents reported the highest level of satisfaction in both Head Start and kindergarten (range = 64–74%). Looking at changes from Head Start to kindergarten, more parents decreased than increased in their satisfaction with school communication practices; however, satisfaction levels were quite similar across the 2 years.

Transition Practices Head Start center directors reported offering a variety of kindergarten transition practices designed to support families as they move from Head Start to elementary school. Averaging across six practices, 89% of directors reported their use in their Head Start center (range = 67–99%; Fig. 5). Practices with the highest reported use included *invites parents to discuss the transition* (99%), *provides parents with information on the school their child will attend* (98%), and *sends home informational letters on the transition* (97%). The least utilized practice was *accompanying parents/children to visit the school* (67%).

Compared to Head Start center directors, kindergarten teachers reported engaging in fewer transition practices. Averaging across six practices, 50% of teachers reported use in their school (range = 5–87%; Fig. 6). Among the practices most

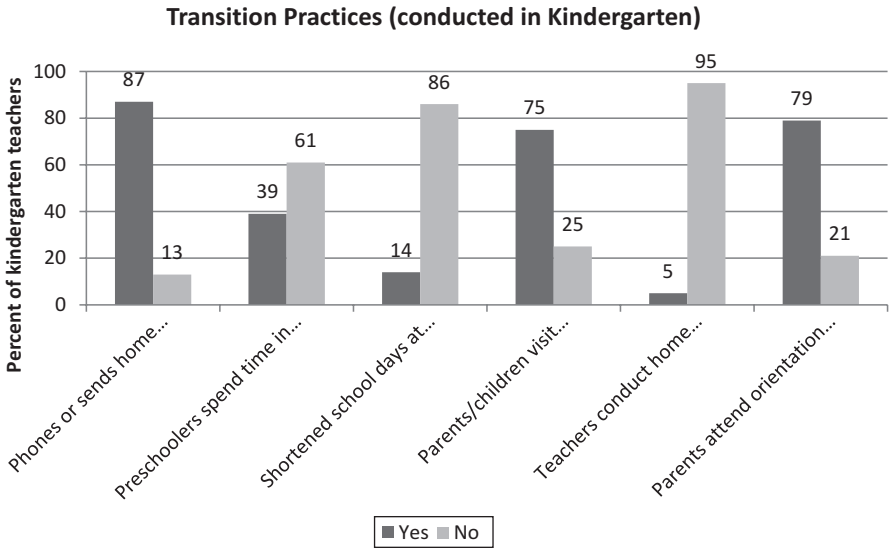

Fig. 6 Percent of kindergarten teachers reporting use of kindergarten transition practices

commonly utilized were *phones/sends home information on the kindergarten program* (87%), *parents attend orientation prior to school start* (79%), and *parents/children visit prior to school start* (75%). The least reported practices were *teachers conduct home visits at the beginning of the year* (5%) and *school days shortened at the beginning of the year* (15%).

Because Head Start center directors and kindergarten teachers reported on the use of different transition practices, a direct comparison of the availability of these practices across Head Start and kindergarten is not possible. Instead, we calculated the sum of transition practices available to children and families in each year and compared these numbers (Table 1). On average, children/families in Head Start had reported access to 5.26 transition practices compared to 2.84 in kindergarten. Just over one-quarter of children/families (28%) had access to four or more transition practices in prekindergarten and kindergarten. The overwhelming majority of children/families (92%) experienced a decrease from Head Start to kindergarten in the number of transition practices offered.

Making Sense of Patterns in Head Start Children's Learning Experiences

Our findings paint a detailed picture of structural and process-oriented elements of prekindergarten and kindergarten learning experiences for a nationally representative sample of low-income children who attended Head Start. This picture includes

elements of variability in children's learning experiences within the prekindergarten and kindergarten years, as well as notable discontinuity across the school transition, with few examples of stability emerging. Unpacking these findings, patterns of inconsistency between Head Start and kindergarten classrooms were split between those suggestive of more supportive experiences in Head Start and those suggestive of more supportive experiences in kindergarten. We discuss these findings in light of the ongoing dialogue on how best to support low-income children's school readiness and adjustment across the transition from Head Start into formal schooling.

Continuity in Early Learning Experiences The most consistent element of children's learning experiences was parent satisfaction with school communication practices. Parents' high level of satisfaction with communication during prekindergarten was not surprising given Head Start's emphasis on parent engagement and support. However, similarly high levels of satisfaction in kindergarten, although promising, were not expected given fewer guidelines and standards for parent communication and lower levels of individualized contact within the elementary school system (Pianta et al., 1999). Although we cannot know parents' level of responsiveness to school communication efforts, their high levels of satisfaction with communication practices in Head Start and kindergarten are heartening and suggest positive connections between home and school likely to benefit children (LoCasale-Crouch et al., 2012).

Discontinuity in Early Learning Experiences The remaining elements of children's early learning experiences indicated aspects of discontinuity across the transition to school, with some patterns highlighting strengths of Head Start classrooms and others the strengths of kindergarten classrooms. Particularly in the case of class size and teacher-child ratio, math instruction, recess/outdoor time, and use of kindergarten transition practices, Head Start experiences appeared better aligned with developmental recommendations, whereas for teachers' level of education and years of teaching experience, length of school day, and literacy instruction, kindergarten classrooms evidenced more supportive experiences. More discussion about these patterns is provided below.

Strengths of Head Start Classrooms

Class Size and Teacher-Child Ratio The majority of children experienced an increase from Head Start to kindergarten in their class size and the number of children per teacher. Class size and teacher-child ratio have garnered much attention from policymakers given a robust body of evidence linking smaller preschool class sizes and teacher-child ratios to more supportive teacher-child interactions and better overall classroom quality, as well as academic and social-emotional gains in children (Howes, Phillips, & Whitebook, 1992; Munton et al., 2002; NICHD ECCRN, 1999, 2000; Phillipsen, Burchinal, Howes, & Cryer, 1997). Small class

sizes appear to have the greatest impact for lower-SES children and when introduced in earlier grades (Finn & Achilles, 1990), findings which support Head Start regulations regarding class size and teacher-child ratios. Moreover, children who attend small classes throughout early schooling sustain benefits even after matriculating into larger classes in later grades (Mosteller, 1995). Our findings suggest that Head Start is more effectively maintaining class sizes and ratios likely to best support early learning and development and that larger kindergarten classrooms with fewer teachers are a source of discontinuity in children's early school experiences that may undercut benefits attributable to smaller, better-staffed Head Start classrooms.

Math Instruction The overall decrease from Head Start to kindergarten in the frequency of math instruction was somewhat alarming. Time spent in academic learning in preschool and kindergarten is a direct predictor of academic performance (Croninger, Rice, Rathbun, & Nishio, 2007; Guarino, Hamilton, Lockwood, & Rathbun, 2006), and early math skills predict not only later math achievement but also language/literacy, science, and grade promotion (Claessens & Engel, 2013; Duncan et al., 2007). Outside of counting out loud and calendar-related activities, a substantial number of children experienced a decrease in instructional frequency once in kindergarten. Decreases were most evident in more advanced activities like measuring and geometric manipulatives which one might presume to garner more attention in kindergarten rather than less. This trend is consistent with findings that kindergarten teachers spend a substantial amount of time on basic concepts that most children have already mastered even though it does little to promote math learning and may even have negative implications (Claessens, Engel, & Curran, 2014; Engel, Claessens, Watts, & Farkas, 2016). Although we cannot extrapolate from frequency ratings the total amount of time spent on math topics, the quality of instruction, or children's engagement during instruction, the patterns of decreased instructional frequency and potential emphasis on more basic concepts in kindergarten highlight an area of discontinuity that is counter to empirically supported developmental practices.

Recess/Outdoor Time The amount of daily recess/outdoor time allocated in Head Start compared to kindergarten provided one of the starkest contrasts among the learning experiences examined. Overall, daily allowances were higher in Head Start than in kindergarten, and nearly three-quarters of children experienced less recess time once in kindergarten. Still, in neither context did average daily allowances meet recommendations endorsed by the National Association for the Education of Young Children of 60–180 total minutes of physical activity per day, and over one-third of kindergarten classrooms fell short of the recommendation for schools' provision of at least one daily 20-min recess period. Recess is an important component of young children's learning contexts, as it provides opportunities for physical activity and play with documented physical, psychological, cognitive, social, and behavioral benefits (Barros, Silver, & Stein, 2009; Jarrett et al., 1998; Pellegrini & Bohn, 2005; Timmons, Naylor, & Pfeiffer, 2007). The transition to kindergarten typically

marks children's initiation into a more formal and structured learning environment with a greater emphasis on academic instruction compared to preschool. Our findings suggest that children are spending less time in recess and outdoor activities at a time when such activities may be critical in helping children expend physical energy and build social relationships that may help them better adjust to the new demands introduced by formal schooling.

Transition Practices More practices designed to help parents and children navigate the transition to kindergarten were available in Head Start compared to kindergarten, resulting in a stark decrease in the number of supports offered in kindergarten, and only a small proportion of children/families being afforded four or more transition practices in both years. Transition practices have garnered increased attention in recent decades as the school readiness paradigm has expanded to encompass the goal of ensuring that schools are ready for children (in addition to children being ready for school; National Education Goals Panel, 1997). Schools' use of transition practices is useful toward both objectives and has been shown to aid in children's adjustment to formal schooling (LoCasale-Crouch et al., 2008; Schulting et al., 2005). Our results indicated that home visits, shortened school days at the beginning of the year, and prekindergarten children spending time in the kindergarten classroom were among the practices least likely to be offered in kindergarten. This is consistent with findings that transition practices that are individualized and take place prior to the start of the school year are among those least frequently employed by kindergarten teachers even though they may provide the greatest source of support and benefit to parents and children (LoCasale-Crouch et al., 2008; Pianta et al., 1999). Although we cannot discern parents' uptake of or satisfaction with schools' transition practices, the diminished offerings in kindergarten compared to Head Start suggest decreasing support for parents and children after leaving their Head Start center.

Strengths of Kindergarten Classrooms

Teachers' Level of Education and Years of Experience Nearly three-quarters of children experienced an increase in their teacher's level of education from Head Start to kindergarten, and about one-half experienced an increase in their teacher's years of experience. These patterns are likely due in part to Head Start regulations that require only half of the national teacher workforce to have at least a bachelor's degree. Although research on the importance of teacher education and experience for children's outcomes has been mixed, a body of evidence exists linking teacher education and experience to children's academic and social skills both directly and indirectly (Connor, Son, Hindman, & Morrison, 2005; Croninger et al., 2007; Howes et al., 1992; Kini & Podolsky, 2016; La Paro et al., 2009; Mashburn et al., 2008; NICHD ECCRN, 2002a, 2002b; Zill et al., 2003). Moreover, recent evidence suggests that having a teacher with 15 years of experience (versus 5) can equate to

2 months of additional learning (Papay & Kraft, 2015). Even though the educational attainment of Head Start teachers is trending upward and currently exceeds 50% of teachers with a bachelor's degree (Bassok, 2013), geographic disparities in Head Start teacher education will likely remain. Although having more educated or more experienced teachers is not sufficient to establish positive developmental trajectories, efforts to systematically increase Head Start teacher education to match that of the kindergarten teacher workforce, and to retain teachers in both Head Start and kindergarten, would decrease discontinuity and likely serve to bolster early learning outcomes for children.

Length of School Day Approximately half of Head Start children attended full-day, but by kindergarten nearly 90% were attending a full-day program, with one-third of the sample moving from part- to full-day classrooms across the transition. Advocates of full-day programming tout increased instructional exposure as well as benefits to parents who may have more latitude to seek employment or continuing education when their children spend more hours per day in school (Barnett & Frede, 2010). Full-day programming may be especially beneficial for low-income children for whom additional hours of weekly program attendance has predicted reading and math gains (Loeb, Bridges, Bassok, Fuller, & Rumberger, 2007), as well as improved social-emotional competencies when in the context of high-quality programming (Reynolds et al., 2014). As such, Head Start's planned transition toward full-day, full-year programming may, under certain conditions, help bolster kindergarten readiness. Further, for many Head Start children, it will lead to greater similarity between prekindergarten and kindergarten in the number of hours per day they spend in the classroom. Even though the prekindergarten and kindergarten school days differ in many ways, a longer Head Start day would mean one less element of change across the transition to kindergarten to which children have to acclimate.

Literacy Instruction As with math instruction, children experienced relatively high frequencies of literacy instruction in prekindergarten. Unlike, math however, these frequencies more often remained stable or increased once in kindergarten. The amount and type of literacy instruction to which preschool children are exposed have predicted growth in specific foundational skills including letter-recognition and vocabulary, as well as overall reading achievement (Claessens et al., 2014; Connor, Morrison, & Slominski, 2006; Lonigan & Shanahan, 2009). Looking across 11 literacy topic areas, with a few exceptions, more children experienced an increase than a decrease in instructional frequency. Observed inconsistencies appeared to reflect kindergarten teachers' emphasis on more advanced topics, in that the largest number of children experienced increases in the areas of listening to stories without seeing print, rhyming words/word families, and phonics, whereas fewer children experienced increases in basic concepts such as name writing and letter names. This bodes well for children given research indicating that even young children from economically disadvantaged backgrounds or who may be lagging behind in early learning skills can benefit from exposure to more advanced literacy instruction (Claessens et al., 2014). Despite a generally positive picture of literacy experiences

in Head Start and kindergarten, several topic areas including retelling stories, rhyming words/word families, and common prepositions were taught less frequently in both classrooms, pointing to potential gaps in children's exposure to certain types of literacy instruction.

Looking Forward

Findings highlight strengths of children's Head Start and kindergarten experiences while revealing areas of discontinuity across the transition that may be targeted to bolster Head Start children's school readiness and adjustment. These patterns also speak to the role of policy in promoting high-quality early learning experiences for low-income children across preschool and kindergarten years. For example, Head Start's ongoing program and performance revisions reflect a unique flexibility to respond to research and recommendations for developmental best practices toward the goal of maximizing program impact for low-income children and families. Evidence-informed changes are currently underway (e.g., increasing program hours and teacher qualifications, expanding quality rating improvement systems) that are certain to shift the landscape of the Head Start experience for children and are likely to result in heightened continuity across their prekindergarten and kindergarten experiences. Systematic changes are likely to be slower within the much larger and less-centralized public K-12 elementary system meaning that Head Start may be the stronger change agent. As economic gaps widen, the identification of effective ways to help set low-income children on a path toward academic success and well-being will become increasingly central to national interests. More research and translational efforts are needed to better understand the state of children's early educational experiences and the conditions under which convergent or divergent experiences relate to short- and long-term development and to integrate this knowledge into effective policy and practice.

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