



## Preschool Parents' Views of Distance Learning during COVID-19

Michele L. Stites, Susan Sonneschein & Samantha H. Galczyk

To cite this article: Michele L. Stites, Susan Sonneschein & Samantha H. Galczyk (2021): Preschool Parents' Views of Distance Learning during COVID-19, Early Education and Development, DOI: [10.1080/10409289.2021.1930936](https://doi.org/10.1080/10409289.2021.1930936)

To link to this article: <https://doi.org/10.1080/10409289.2021.1930936>



Published online: 31 May 2021.



Submit your article to this journal [↗](#)



View related articles [↗](#)



View Crossmark data [↗](#)

---



## Preschool Parents' Views of Distance Learning during COVID-19

Michele L. Stites<sup>a</sup>, Susan Sonneschein<sup>b</sup>, and Samantha H. Galczyk<sup>b</sup>

<sup>a</sup>Department of Education, University of Maryland Baltimore County; <sup>b</sup>Department of Psychology, University of Maryland Baltimore County

### ABSTRACT

*Research findings:* While research is beginning to emerge about the educational landscape during COVID-19, little attention has been paid to preschool. This mainly descriptive study examined U.S. parents' views on distance learning for their preschool children during the COVID-19 crisis. Using a survey distributed via social media groups to U.S. parents of preschoolers (N = 166), we examined the following: the types of activities parents engaged in, obstacles to preschool distance learning, and the types of resources parents needed. Results of the online survey indicated that parents received and engaged in more literacy based activities than mathematics ones. Additionally, parents reported few opportunities for social emotional engagement. Responding parents indicated that time was a major factor in assisting their children with distance learning and would prefer activities that did not take significant time, and allowed for social interaction with other children. *Policy or Practice:* Current research indicates that preschool children missed critical learning during the COVID-19 crisis. Children who enter kindergarten following the COVID-19 crisis, may need additional support in mathematics and social emotional engagement given that parents are reporting lower levels of such activities during distance learning. And, if distance learning continues or reoccurs, mathematics and social opportunities as well as teacher training need more consideration.

The nature of children's education throughout much of the world changed dramatically with the onset of COVID-19 during the spring of 2020 (Bao et al., 2020; Dong, Cao, & Li, 2020). Most schools switched from in-person instruction to virtual or distance learning with an associated change in the role parents were expected to play (Hoffman & Miller, 2020; Lau & Lee, 2020). Although parents are typically expected to support or augment their children's in-school learning, with the change to distance learning, they now are expected to play a much larger role (Schmidt et al., 2020) What exactly that role is, however, has not been well-documented; the studies that have been done have focused on elementary school age and older children, and used mainly non-U.S. populations (Russell et al., 2020; Schmidt et al., 2020). Accordingly, this paper presents mostly descriptive data documenting U.S. preschool parents' perceptions of their role in their children's distance learning during May 2020, about 6 weeks into in-school suspension of classes in the United States. Such data provide an important foundation for learning what challenges the educational system faces or will face as children return to school and what may be potential strengths to build upon.

### Theoretical Framework

This research reflects academic socialization theory (e.g., Puccioni, 2015) and Bronfenbrenner's (1979) ecological model. Parents' academic socialization includes parents' attitudes, values, goals,

expectations, and beliefs about education as well as the opportunities and activities they make available to their children (Puccioni, 2015). According to Hoover-Dempsey et al. (2005), parents must believe they have the relevant skills with which to assist their children, and the time to do so, to be involved in their children's education.

The ecological model notes that children's development occurs in several overlapping contexts (e.g., microsystems) and stresses that these contexts need to work well together (mesosystems) to optimize children's development (Bronfenbrenner, 1979). For example, Epstein (2001) talked about overlapping spheres of influence in which parents and educators together exert an influence on children's learning. Relatedly, Hoover-Dempsey et al. (2005) talked about the importance of home and school factors in predicting parents' involvement in their children's education. Parents need to know what teachers expect them to do with their children and feel able and willing to do so.

### ***The Importance of Preschool***

Although children are not required to attend preschool in most U.S. educational jurisdictions (Pre-K Now, 2008), approximately 53% of U.S. children between the ages of three and five do attend some form of preschool prior to entering formal schooling. These percentages vary across demographic groups with children of color being less likely to attend preschool (Child Trends Databank, 2019).

Attending preschool is important because of the positive association between such attendance and the development of children's academic, social/emotional, and executive skills (e.g., Ansari, Pianta, et al., 2020; Barnett & Camilli, 2002; Barnett et al., 2018; Pianta et al., 2009) needed for kindergarten readiness. Children who attend preschool generally begin kindergarten with stronger academic skills than children who do not attend a preschool program (Barnett, 1995). For example, Li et al. (2020, described in Ansari, Pianta, et al., 2020), conducted a meta-analysis of 65 studies and found that children attending preschool showed a benefit of a quarter of a standard deviation compared to those who did not. Consistent with such findings, New York City provides universal, free full-day preschool to all four year old children (New York City Department of Education, 2020). Other educational jurisdictions are increasingly offering universal prekindergarten as well (Stavely, 2018). Although the gains from attending preschool persist after the start of kindergarten, they do decrease as time goes on (see Ansari, Pianta, et al., 2020, for a review). Regardless, the early academic skills with which children enter kindergarten predict their academic success in later elementary school (Duncan et al., 2007; Nguyen et al., 2016; Sonnenschein et al., 2014). And, in fact, kindergarten teachers expect children to start kindergarten with some level of academic preparedness (Bassok et al., 2016).

Although the academic benefits of preschool are important, so are the social/emotional benefits (Barnett & Frede, 2010; Hirsch-Pasek et al., 2020). Many kindergarten teachers view social/emotional readiness as even more important than other early academic skills (Rimm-Kaufman et al., 2005; West et al., 2001). By engaging in rich, social conversations with other children and adults in the preschool classroom, a child's academic and social skills improve (Chapman, 2000). These social interactions may better prepare a child for formal schooling. For example, Ramsook et al. (2020) found that higher levels of social skills predicted higher literacy and mathematics skills when children entered kindergarten. Additionally, studies have demonstrated that the use of mathematical language in social interactions is critical in developing mathematics concepts (Clements et al., 2014; Purpura & Logan, 2015; Stites & Brown, 2019) and numeracy skills (Purpura & Reid, 2016). Academic, executive function, and social emotional skills are often correlated (Pace et al., 2019), showing the importance of preschool for all aspects of young children's development.

The importance of preschool for developing kindergarten readiness skills and social/emotional learning is recognized by parents. Parents view preschool as a place and time for children to develop the academic, behavioral, and social/emotional competencies needed to be successful in kindergarten and subsequent grades (Hatcher et al., 2012). Moreover, they turn to their children's preschool teachers for suggestions for assisting them with reading and mathematics at home (Stites et al., 2021). Ansari, Pivnick, et al. (2020) conducted focus groups with Latinx parents of preschoolers in

Texas. While participating parents indicated a desire for basic childcare, they also noted the importance of academic development and social/emotional learning. Metaferia et al. (2020) conducted a study of 87 Hungarian parents to examine their beliefs about the importance of play and the purpose of preschool. The results indicated that parents viewed social skill development as the most important component of preschool.

### ***Parents' Involvement in Their Young Children's Schooling***

How parents participate in their child's education is influenced by their attitudes, values, goals, expectations, and beliefs about education as well as the opportunities and activities they make available to their children (Puccioni, 2015; Sonnenschein et al., 2018). Parental beliefs about their role in their child's learning are positively and significantly related to how often children engage in relevant reading and mathematics activities (e.g., Sonnenschein et al., 2016). These home learning activities are related to children's early educational development (e.g., McCormick et al., 2020; Sonnenschein & Sawyer, 2018) and later academic success (Duncan et al., 2007). We know that parents of preschoolers rate highly the importance of them assisting their children with reading and mathematics at home (Sonnenschein et al., 2018, 2016).

There is a large body of research showing that parent-child book reading supports the development of children's literacy skills (e.g., Sénéchal & LeFevre, 2002; Serpell et al., 2005), and, although to a lesser extent and with more inconsistent findings, mathematics activities support the development of children's mathematics skills (Blevins-Knabe, 2016; Susperreguy et al., 2020). Previous research has demonstrated that parents are more likely to engage in home-based reading activities than mathematics ones (e.g., Blevins-Knabe, 2016; Stites et al., 2021). The more limited mathematics exposure is particularly concerning given the importance of mathematics skills for later school success (Duncan et al., 2007). This again highlights the need to document what distance learning activities are occurring in preschool children's homes during COVID-19.

Because most schools around the world have switched to distance learning during COVID-19 (Dong et al., 2020; The Hunt Institute, 2020), this has placed an increased pressure on parents to support their child's learning. There is beginning to be some research on what parents are doing in some countries (e.g., Dong et al., 2020; Lau & Lee, 2020) However, we know very little about what parents of preschoolers in the United States are doing for distance learning with their children, what is working well and what is not. Note that the term distance learning covers a wide variety of forms of instruction including some form of mailed instruction, use of digital tools, and online learning (Lau & Lee, 2020). We use the term in this paper to refer to online learning.

In one of the first studies on what parents are doing during COVID-19 with their young children, Dong et al. (2020) examined the perceptions of 3275 Chinese parents in Central Mainland China. Using a widely distributed survey, they found that parents held a negative view of distance education for young children. The parents who participated in the study indicated concerns with their children's ability to self-regulate in order to participate in lessons, their own lack of time and knowledge to teach their children, and an increase in screen time.

Lau and Lee (2020) collected data from 6702 parents of kindergarten (comparable to U.S. preschool and kindergarten) and primary school children in Hong Kong three weeks after in-school classes were suspended. Their findings support those of Dong et al. (2020). Parents reported that their children had difficulty completing tasks without significant parent mediation. Parents also wanted more support from schools. Abuhammad (2020) looked at comments given on Facebook by 248 Jordanian parents of school age children during April and May 2020. Most of their comments focused on barriers they were experiencing. They categorized these comment as personal (lack of training or qualifications), technical (lack of internet connectivity), logistical (difficulty using distance learning to meet students' needs), financial (inability to pay for technology or internet).

Although there is starting to be a growing literature on the effects of COVID-19 on families, we need to extend that research to U.S. families of preschool children and focus on distance learning. Few

studies with U.S. samples have looked at how families are handling distance learning. For example, Russell et al. (2020) examined the increased burdens on adults caring for children, the adult-child relationship, and mental health during COVID-19. The researchers used data from a survey distributed to a pool of individuals who had children under the age of 18 years. Results indicated potential associations between increased demands on caregivers and their mental health.

### **The Present Study**

This study examines U.S. preschool parents' perceptions of distance learning during the COVID-19 pandemic. We used an online survey administered to preschool parents to examine the challenges of distance learning during COVID-19. Although what occurs at home is positively related to later academic outcomes (e.g., Serpell et al., 2005; Tamis-lemonda et al., 2019); the dynamics of the home learning environment have changed substantially during the COVID-19 pandemic.

To date, little attention has addressed preschool parents in the United States, despite the known importance of the preschool years. At this time, we know little about what preschool parents in the United States like and dislike about distance learning or what supports they need. It is critical that we better understand the role of preschool parents in their children's learning during this pandemic so that distance learning is not only effective for young children but feasible for their parents. Parents must believe they have the relevant skills with which to assist their child, and the time to be involved in their child's education (Hoover-Dempsey et al., 2005). This latter point is particularly important during times, such as now, when parents, regardless of their background, educational level, and availability, may be asked by their child's school to play a more active role in their child's preschool education.

This study addressed four questions.

- (1) What kinds of distance learning activities do parents of preschoolers engage in during COVID-19? Of particular interest is documenting literacy and mathematics activities because of the importance of these skills for later schooling. Based on previous research, we hypothesized that there will be more literacy activities than mathematics ones.
- (2) What types of distance learning activities do parents view as successful? Which types are not seen as successful?
- (3) What obstacles do parents of preschoolers face with distance learning? The limited prior research on this topic precludes including any hypotheses for this and question two.
- (4) What information or resources would parents of preschoolers find helpful to assist them with distance learning? Prior work (Stites et al., 2021) shows that parents of preschoolers would appreciate receiving more information from teachers about how to foster their children's literacy and mathematics development. Consistent with that, we hypothesized that parents would request activities to foster their children's early academic skills, particularly literacy and mathematics.

## **Method**

### **Participants**

After receiving IRB approval from our university for an exempt submission, parents were recruited via social media sites targeting parents of preschool children. Participants included 166 parents (161 mothers, 3 fathers, 1 grandparent, and 1 other) between the ages of 24 and 50 years ( $M = 37.11$ ,  $SD = 4.59$ ; see Table 1). Not all parents answered all questions, so the  $n$  across questions varied. Parents reported having 1 to 6 children in their family ( $M = 2.27$ ,  $SD = 0.84$ ). The mean age of children enrolled in preschool was 4.65 years ( $SD = 0.89$ ). About half the preschool children in the study were female (51%). Prior to COVID-19 most children attended private preschools (82%), with the

**Table 1.** Caregiver demographics (N = 166).

Variable	<i>M (SD) or %</i>
Age (years)	37.11 (4.59)
Relation to Child (%)	
Mother	97
Father	2
Grandparent	<1
Other	<1
Race/Ethnicity (%)	
American Indian or Alaskan Native	<1
Asian	4
African American/Black	6
Latino/a/x	5
White	86
Other	2
Highest Educational Degree (%)	
HS/GED	2
Some college	8
Bachelor's	34
Master's	39
Doctoral	17
Marital Status (%)	
Married/Partnered	96
Divorced	2
Single	2
Household Income (%)	
Under \$25,000	<1
\$25,000–\$49,999	4
\$50,000–\$74,999	3
\$75,000–\$99,999	9
\$100,000–\$124,999	21
\$125,000 or more	62
Child Gender (% female)	51
Child Age (years)	4.65 (0.89)
Type of School Child Attends (%)	
Head Start	1
Public Pre-K	10
Private Pre-K	82
Other	6

Percentage totals may not equal 100% due to rounding.

remaining children attending public preschools (10%), Head Start (1%), or other (6%). Ninety-six percent of parents were married. Most of the participants identified as White (83%) and had at least a bachelor's degree (90%). Relatedly, the majority of all respondents (62%) reported an annual household income for 2019 of 125,000 USD or more. These findings are consistent with demographics of other online surveys (e.g., Dworkin et al., 2016; Whitaker et al., 2017). Parents reported living in a total of twenty states across the United States. at the time of the survey, although most parents (85%) came from the Middle-Atlantic states.

### **Procedure**

Parents were invited to complete an anonymous online Qualtrics survey posted on various social media sites during May 2020. A link to the survey (in English and Spanish) was reposted weekly for three weeks. Responding parents were offered a chance to win a 25.00 USD gift card from a raffle drawing. The first things parents saw was information about the study and what they would be asked to do. This included IRB-approved information about parents' voluntary participation in the project. Parents interested in participating in the study were asked to click on the link provided by researchers on the social media post. Parents were told that opening the survey implied they consented to

participate. We have used this technique in prior work of ours (Sonnenschein & Stites, *in press*). Upon completion of the survey, participants were redirected out of the survey and their responses were saved. Although the survey was available in English and Spanish, no one completed it in Spanish. Respondents who wanted a chance to win the raffle, were directed to another link at the end of the survey.

### **Measure**

The Qualtrics online survey consisted of 52 items. Items were mostly multiple-choice type questions with some open-ended ones. For multiple-choice questions, participants were instructed to either select one best answer or all answers that apply. The question, “How does COVID-19 impact your day-to-day life?” is an example of a multiple-choice question where participants were instructed to select one best answer. Responses to this question included: not at all, a little, much, very much, and extremely. The question, “What do you *not* like about the lessons sent home?” is an example of a question where participants were instructed to select all response options that apply. Responses that participants could select included: not easy to follow, lessons take too long to complete, children do not enjoy the lessons, lessons require too much parental support, other, and I am satisfied with the lessons that are sent home. Questions used skip logic so that participants only completed questions that directly applied to them based on their prior responses. Survey items inquired about the types of activities parents and preschoolers were completing during distance learning, their perceptions of distance learning during COVID-19, and the impact of COVID-19 on parents of preschoolers. Sample questions are provided in [Table 2](#). Additional survey questions inquired about the parents’ demographic background including race/ethnicity, age, highest level of education, household income, and marital status. Examples of demographic questions from the survey include: “What is your relationship to the child?” and “How many children are in your family?”

### **Coding and Scoring of Data**

Responses to quantitative questions were downloaded directly from Qualtrics into Microsoft Excel and then into SPSS (Version 27). Responses to quantitative questions were tabulated and analyzed. Responses to each of the qualitative questions were analyzed using a consensual coding process. First, responses were grouped into domains developed by the researchers based on the data. Next, “core ideas” (Hill et al., 2005, p. 200) were established to ensure responses were understandable. Finally, a “cross analysis” (Hill et al., 2005, p. 200) was completed to develop the final themes. After the authors identified themes in the data, they engaged in investigator triangulation to compare themes and reconcile any questions. Additional information is provided, as appropriate, in the Results section. Overall, coders demonstrated 98% interrater reliability. The few discrepancies in coding were resolved by discussion.

### **Results**

Prior research shows differences related to children’s gender in the types of home learning activities parents complete with their young children (MacPhee & Prendergast, 2019). Therefore, we first correlated child gender with the various outcome measures. Because there were no statistically significant associations ( $p > .05$ ), we did not consider gender further in this paper.

#### ***What Kinds of Distance Learning Activities Do U.S. Parents of Preschoolers Engage in during COVID-19?***

Seventy-three percent of parents who responded to the survey had children who were provided distance learning activities by their teachers or schools during the COVID-19 crisis. About 60% of

**Table 2.** Sample survey items.

	Items	Response type
Q9	On a typical day, how much time are you able to devote to your child's distance learning? <ul style="list-style-type: none"> <li>• None</li> <li>• Less than 30 minutes</li> <li>• 30–59 minutes</li> <li>• 1–2 hours</li> <li>• More than 2 hours</li> </ul>	Multiple choice
Q10	What, if any, distance learning activities are you completing with your child(ren) while schools are closed?	Open-ended
Q12	In your opinion, what is working well with distance learning?	Open-ended
Q13	What makes it difficult for you to complete distance learning activities? <ul style="list-style-type: none"> <li>• Amount of time needed to complete activities/lessons</li> <li>• Directions are unclear</li> <li>• Child(ren) need too much parental support</li> <li>• Child(ren) resists completing school work</li> <li>• Child(ren) is unable to maintain attention</li> </ul>	Multiple choice
Q14	What do you expect teachers to do in order for distance learning to be successful?	Open-ended
Q15	What resources would you like to receive from your child's teacher or school to assist your child in distance learning?	Open-ended
Q16	What do you like about the lessons sent home? <ul style="list-style-type: none"> <li>• Easy to follow</li> <li>• Lessons can be completed quickly</li> <li>• Children enjoy the lessons</li> <li>• Lessons do not require significant parental support/children can complete independently</li> <li>• Other; please specify</li> <li>• I do not like the lessons that are sent home but I think lessons should be sent home</li> <li>• I don't think lessons should be sent home</li> </ul>	Check all that apply
Q18	In addition to what the school provides, what, if any learning activities are you completing with your children? <ul style="list-style-type: none"> <li>• Reading activities</li> <li>• Math activities</li> <li>• Science activities</li> <li>• Music activities</li> <li>• Art activities</li> <li>• None</li> <li>• Other; please specify</li> </ul>	Check all that apply
Q24	Is there anything else about the effects of COVID-19 on your child's education that you would like to share with us?	Open-ended

Demographic questions are not included in the table. For a multiple choice response type parents were only able to select one response.

those parents reported being able to spend less than one hour on distance learning, with 16% of parents reporting they did not spend any time on distance learning.

After the authors reviewed the responses to the open-ended question, “What, if any, distance learning activities are you completing with your child(ren) while schools are closed?”, responses were coded into literacy, mathematics, science, art, and social/emotional related activities. As we hypothesized, when asked about the types of distance learning activities they were provided by their child's teacher, 53% of parents reported receiving literacy-based activities (e.g., letter sound practice, sight word practice, etc.) whereas 31% reported receiving mathematics based lessons (counting, shape identification, etc.). The difference between these percentages was significant,  $t(101) = 4.505$ ,  $p < .001$ , Cohen's  $d = .506$ . In addition to academic activities, 26% of parents reported that their child's teacher provided opportunities for social engagement, such as zoom calls. Significantly fewer parents (26%) mentioned social engagement opportunities than academic ones (84%),  $t(101) = 40.24$ ,  $p < .001$ , Cohen's  $d = .438$ .

In addition to what was provided by the school, parents were asked to respond to multiple choice questions about whether they provided additional learning opportunities for their children, and if so, what. Fifty-seven percent of the parents responded “yes” when asked if they engaged in parent-directed learning activities (e.g., not provided by the school) with their children. A follow-up multiple

**Table 3.** What, if any, learning activities are you completing with your children while schools are closed? (Check all that apply).

Response	n	Percentage (%)
Reading Activities	97	80
Art Activities	91	53
Music Activities	57	33
Math Activities	74	61
Science Activities	67	38
None	7	4
Other <sup>a</sup>	15	9

<sup>a</sup>Participants who responded “Other” had an opportunity to write-in the other learning activities they were completing with their children. Sample responses from parents included: “Lots of outdoor and nature time,” “Hands-on sensory activities,” and “exercise.”

choice question was provided to parents who responded “yes” to completing parent-directed activities. This question contained a list of choices from which to identify the types of activities they were completing in addition to what the school provided (see Table 3 for percentages by activity type). Parents reported engaging in more literacy-based, parent-directed activities (80%; e.g., reading with the child, identifying letters) than mathematics one (61%; e.g., counting objects, identifying numbers.)  $t(165) = 4.56, p = .00, \text{Cohen's } d = .37$ ). As shown in Table 3, parents also reported doing other activities with their children- -music activities were provided by 61% of parents, art by 38% and science by 38%.

We also asked parents what types of activities they had done with their children at home prior to COVID-19. Parents reported completing parent-directed literacy (82%) and mathematics (38%) activities with their children. The percent of parents who reported completing parent-directed literacy activities prior to COVID-19 was not significantly different from those who commented they completed literacy activities during COVID-19  $t(114) = .653, p = .515, \text{Cohen's } d = .428$ . However, interestingly, there was a significant increase in the percentage of parent-directed mathematics activities during COVID-19,  $t(114) = 5.02, p = <.001, \text{Cohen's } d = .501$ .

### ***Which Distance Learning Activities Work Well and Which Do Not?***

Responses to multiple choice questions indicated that, of the parents receiving distance learning activities from their preschool children’s schools, 94% believed that these activities were easy for them to understand. Parents reported liking activities that were live, allowed for peer interaction, and were short in duration. Despite most parents viewing the activities as easy for them to understand, only 28% reported being satisfied with the activities that the schools sent home. In fact, when asked in a follow-up open-ended question what was working well with distance learning, 35% of parents spontaneously replied, “very little”.

We first did a preliminary review of the content of the open-ended remarks about what was working well/not well with distance learning. Based on that review, we coded remarks as positive or negative about academics, and similarly, positive or negative about social/emotional engagement. *T*-tests compared the percentage of positive and negative remarks in the academic domain and again in the social/emotional domain. Significantly more parents made positive remarks (76%) than negative remarks (4%) about the academic activities provided by the school  $t(45) = 2.77, p = .008, \text{Cohen's } d = .400$ . In contrast to the pattern with remarks about academic content, the percentage of parents who made positive remarks about social/emotional content (21%) was significantly lower than the percentage who made negative remarks (79%)  $t(46) = 2.92, p = .005, \text{Cohen's } d = .449$ .

Negative remarks about opportunities for children's social emotional development was a theme throughout the open-ended responses. Qualitative analysis indicated that 36.4% of parents were concerned with their children's social/emotional development and the loss of activities that would foster this. One parent noted, "Kids at this age learn through experience and socialization." When asked about the effects of distance learning on her child's education, another parent said, "Obviously the social interaction piece that is so critical for the age is virtually absent."

Consistent with the concerns about social/emotional learning expressed by parents, when children were given opportunities for social engagement by teachers, parents made positive remarks about distance learning in the open-ended questions. Twelve percent of parents noted that opportunities for social engagement worked well during distance learning. One parent said that she found the "virtual room where children can just talk with one another and their teachers" to be successful. Other parents mentioned, "seeing friends" and "keeping in touch with classmates" were positive components of distance learning. Despite the concerns for social engagement, only 27% of parents indicated that they were engaging in parent-directed opportunities for social/emotional engagement such as zoom calls with peers and family members.

### ***What Obstacles Do U.S. Parents of Preschoolers Face with Distance Learning?***

Following the preliminary analysis for what worked well/did not with distance learning, responses to this open-ended question underwent a secondary analysis for parent reported obstacles. Two main themes emerged. Theme one (27.9% of the responses) centered on the length and difficulty of the activities that were sent home. Although parents (24%) acknowledged that teachers were doing everything they could to make distance learning successful, nevertheless, the most common difficulty for parents (38%) was that the child needed too much parental support to complete assignments. Between the demands of their own jobs (18%) and having other children at home (9%), finding the time to complete activities was especially difficult for some parents. These concerns were highlighted in responses like, "It's hard for preschoolers to do this by themselves. And I need to work. I can set him up with playdough or Legos and he can play but I'm not sure he is learning anything."

Parents also mentioned time as an obstacle to their children participating in or completing activities. This may be due to demands of their jobs and/or having other children at home. For example, when asked about the resources provided by their children's teachers, one parent responded that she liked the resources provided, but that "[I] just don't have the time to use them with my work schedule."

Beyond issues with time, 46% of the parents indicated a general lack of satisfaction in the distance learning activities provided because they required too much parent involvement. In addition to mentioning lack of time to engage in distance learning activities with their children, 38% of parents identified the amount of adult support needed as an obstacle to distance learning. For example, one parent commented, "It's hard for preschoolers to do this by themselves. And I need to work." Interestingly, parents indicated that distance learning took up increasingly more time as the year progressed, for example, one parent noted, "Distance learning worked for the first few weeks, but then it required an increasing amount of parent support as he (the child) lost interest. We both work full time so that was very difficult".

Theme two centered around discontinuing distance learning all together because of the age of the child (34.5% of parents mentioned that). Parents commented about the appropriateness of distance learning for preschoolers. One parent responded, "Distance learning with preschoolers is nearly useless." Parents attributed difficulty completing assignments during distance learning to many reasons (e.g., child unable to maintain attention, child resists doing schoolwork). One parent noted, "I don't think it's a teacher issue. It's the age of the kids – it doesn't translate to distance learning."

It is important to remember that COVID-19 placed a multitude of stressors on parents that extended beyond distance learning. Eighty-nine percent of parents indicated that COVID-19 impacted

their day-to-day life more than a little. Additionally, parents reported struggling with not having childcare (72%) and having to homeschool their older children (88%). And, unfortunately, 27% of parents reported a loss of employment/salary. Parents who were considered essential workers often echoed these sentiments. This parent indicated, “I now have to find childcare for my PreK kiddo because my husband and I are both healthcare workers. It’s not an option to work while also being responsible for him.”

### ***What Information or Resources Would U.S. Parents of Preschoolers Find Helpful to Assist Them with Distance Learning?***

Parents indicated a preference for receiving general academic resources such as worksheets (27%) and ready-made materials (36%). Premade academic “packets” were frequently requested, with parents mentioning the time required to prepare and execute lessons. For example, one parent noted she would like, “Precut work. Don’t make the parents print and cut everything.”

A follow-up question about what resources parents need indicated that some parents (16.1%), despite reporting that live sessions were most successful, indicated that they would like to be able to complete activities when it worked best for them rather than having set sessions and activities. One parent said, about she and her partner, “Two working parents just trying to keep everyone alive. I don’t have time to do that.” Another parent stated, “I just had a hard time finding the time to do it all and create a Montessori classroom in my home.” A third parent mentioned that despite liking the resources provided, parents “just don’t have the time to use them with [their] work schedule.” Another parent described the demands of distance learning as, “impossible with my career.” Implicit in what each of these parents said is the need to have more flexibility in when, and how, they could complete things.

Once again, parents spontaneously noted a need for social/emotional resources. For example, one parent commented, “I think a virtual room where children can meet with one another and their teachers should be standard.” When asked about what the school should provide, one parent noted that she would like teachers to provide “Video chats. They like to be able to see their classmates.” Twenty-three percent of parents specifically requested activities that allow for social interaction.

## **Discussion**

Preschool is a critical time for facilitating the foundation of children’s academic readiness and social emotional skills (Ansari, Pianta, et al., 2020; Barnett et al., 2018). However, with the onset of the COVID-19 pandemic, many preschool programs around the world transitioned to distance learning (The Hunt Institute, 2020). In this paper we examined distance learning in the U.S. during May 2020 from the perspective of preschool parents with particular attention to parental perceptions of school-provided activities, parent-directed activities, parental beliefs about what worked well and what did not, and the obstacles parents faced in facilitating preschool distance learning. As we discuss below, despite differences in customs and beliefs across various countries, many of the issues raised by U.S. parents in our study were in keeping with those raised by parents in Mainland China, Hong Kong, and Jordan (Abuhammad, 2020; Dong et al., 2020; Lau & Lee, 2020). Our findings are consistent with Bronfenbrenner’s (1979) theory stressing the importance of communication between the child’s home and school microsystems. It also is consistent with Hoover-Dempsey et al.’s (2005) theory which posits parents will participate in their children’s education if they have the time and skills.

### ***Types of Distance Learning Activities U.S. Parents of Preschoolers Engaged in during COVID-19***

The results of this study support prior research findings based on in-school learning patterns and extend them to what is occurring during distance learning due to COVID-19. Previous research (Early

et al., 2010) has shown that, typically, only 8% of a full preschool day is devoted to mathematics while 17% is devoted to language arts. Additionally, research with parents shows that they are more likely to support literacy than mathematics skills at home (Blevins-Knabe, 2016; Stites et al., 2021).

Parents reported that preschool teachers were more likely to provide lessons and activities related to literacy than mathematics. The literacy based resources included activities like book reading, letter identification, and writing. Fewer parents reported receiving mathematics resources than literacy ones. The parents in this study also displayed a literacy-centric focus when providing their children with parent-directed learning opportunities. Similar to what they reported receiving from teachers, parents said they tended to initiate literacy activities like book reading and word identification in addition to what was provided by the school.

Although parents reported engaging in more parent-directed literacy activities than mathematics ones, they did report completing more parent-directed mathematics activities during distance learning than before COVID-19. While the number of mathematics activities did increase, the lack of mathematics engagement is still concerning because of the well-known impact of early mathematics skills on later academic success (e.g., Bodovski & Farkas, 2007; Claessens & Engel, 2013).

When asked about other types of activities that were provided by the school during COVID-19, parents discussed opportunities for their children's social engagement, and the need for such opportunities. While some parents reported that social opportunities were provided, these were less frequent than academic ones. Social opportunities are considered a key component of the preschool experience (Barnett et al., 2018). We know that kindergarten teachers emphasize the importance of children's social skills at school entry (Rimm-Kaufman et al., 2005; West et al., 2001). Hirsch-Pasek et al. (2020) raise concerns about the loss of young children's learning opportunities during COVID-19, particularly opportunities for children of color or from low-income backgrounds (see also Bao et al., 2020; Hoffman & Miller, 2020). And Barnett and Jung (2021) found that parents in their sample of 981 U.S. families reported elevated levels of significant social/emotional problems experienced by their children during the pandemic. Whether children are displaying increased social/emotional problems because they lack the social exposure of preschool or because they are living and interacting with family members who themselves are stressed or both is beyond this study to discern (Schmidt et al., 2020). Nevertheless, there is a need to focus on improving the social/emotional well-being of these children.

### ***What U.S. Parents Consider Effective and Ineffective Distance Learning for Preschool***

While other studies have focused on general stressors related to COVID-19, this study focused on stressors related specifically to distance learning for U.S. preschoolers and their families. Parents appeared to struggle with the added responsibility of distance learning, which is consistent with the emerging research on the increased stressors placed on care-giving adults by COVID-19 (Prime et al., 2020; Russell et al., 2020). For example, Russell et al. (2020) examined the increased demands on parents during COVID-19 and the impact on mental health. In contrast, we examined the demands on parents only of distance learning. We found that parents are having difficulty balancing the general stressors of their lives (jobs, general family responsibilities) with the demands from their young children's schools. This is consistent with studies done outside the United States (Mainland China: Dong et al., 2020; Hong Kong: Lau & Lee, 2020; Jordan: Abuhammad, 2020). Work and taking care of other children in the family were among the most common barriers to distance learning.

Overall, parents were positive about supporting their children's academic growth, particularly when they could do it in short segments and children could work independently, at least for part of the time. In other words, if the academics provided were quick to complete, easy to follow, and did not require much parental support, parents made positive comments. For example, providing parents with detailed instructions on using household items (e.g., socks) that children can independently count and sort (by color, size, etc.) may be viewed more favorably than an activity that requires significant

preparation (e.g., cutting) and interaction. Similar to the findings of Lau and Lee (2020), the parents in this study also desired flexibility in completing the activities. In the aforementioned study, the parents sought short, prerecorded videos that could be completed when convenient. Our responding parents asked for worksheets and activity packets that could be completed when the parents had time in their schedule.

In contrast to parents' comments about academic learning opportunities, their comments about social/emotional opportunities were largely negative. When parents were positive about social emotional engagement, it was because their children were given opportunities to interact with peers. Consistent with the views of researchers and educators, parents' comments reflected the importance of preschool for children's social/emotional development as well as for academics (Ansari, Pianta, et al., 2020; Barnett & Camilli, 2002; Barnett et al., 2018; Hirsch-Pasek et al., 2020).

### ***Obstacles Experienced by U.S. Parents***

Many of the parents reported having too little time to assist their children due to other demands on their time and, perhaps relatedly, their children needed too much support from them. For example, one parent noted, "multiple children that require assistance with school and two parents who are still expected to work full time make it impossible to be successful." Another noted, "Our family has one parent who is essential personnel and one who is working from home so the learning falls on one parent who is also working". These obstacles are consistent with what parents in other countries (e.g., Mainland China, Hong Kong, Jordan) have reported (Abuhammad, 2020; Dong et al., 2020; Lau & Lee, 2020).

### ***Information or Resources that U.S. Parents of Preschoolers Would Find Helpful to Assist Them with Distance Learning***

We hypothesized that parents would want additional academic resources from their children's teachers and schools. This hypothesis was only partially supported. The parents in this study made more comments about needing resources for their children's social/emotional engagement than for their academic development. Although it did not confirm our hypothesis, it is not necessarily surprising given that social/emotional development is a major aspect of preschool. Our finding is also consistent with that of Barnett and Jung (2021) whose families reported increased social-emotional problems displayed by their preschoolers during COVID-19.

### ***Limitations and Future Directions***

These descriptive data are a first step to understanding the impact of COVID-19 on families in the United States. Unfortunately, our sample of participants were primarily White (86%) and affluent (62%). Distance learning should have been easier for this group than for less affluent parents because these families all had access to computers and technology. Low-income families are less likely to have such access. Collis and Vegas (2020) reported that about 12% of the poorest children in the United States lacked access to digital devices and technology. Although clearly the diversity and representativeness of our sample was a limitation, such a pattern where the respondents are typically White and more affluent is common with online surveys (Galea & Tracy, 2007). The lack of diversity in the sample may limit our ability for generalization, but we believe it does provide important initial information about preschool distance learning in the United States. It also was consistent with patterns found in other countries (e.g., Dong et al., 2020; Lau & Lee, 2020) Future research should include a more diverse group to determine what the needs are for various segments of the U.S. population. Recruitment should go beyond online listservs and social media and recruit from Head Start centers and public school prekindergarten programs, which serve more of a low income population.

Our data are a snapshot of activities from May 2020, about six weeks after in-school classes stopped in the United States. What would happen as time went on? Things could improve as teachers became more skilled in their use of technology and received additional training and parents adapted. However, the comments of our parents suggest that such may not be possible given the ongoing demands of work and school as well as more general home life issues. Some parents in our study were already allowing their children not to do assigned tasks because children found the work and learning modality boring or stressful. Barnett and Jung (2021) results from 981 U.S. parents showed a decrease in reading activities over time. Seventy-one percent of parents reported reading to their children at least three times per week in December compared to 85% of the parents during the prior spring. Such findings show the need to conduct studies that explore distance learning at different points in the pandemic in order to optimize the home learning over time.

Future research also should include questionnaires that collect more information about the families. We did not include information about whether the parents worked “outside” the home, and if so, for how many hours. Such information would give additional insight into the parents’ availability for assisting their children. For example, one of the parents in our sample said her child often did not complete the required lessons because both parents worked full-time. These data are self-report, a common means of collecting information such as ours (Spector, 2006). However, such data do not allow us to consider the nature of the interactions parents had with their children. It also does not allow exploration of the teachers’ viewpoints. Another gap in the literature is observing actual interactions between parents and their children. In addition, it is important to follow children and see what their academic and social/emotional skill development is. Will the social/emotional problems identified in the Barnett and Jung (2021) sample continue or decrease as children return to school and some of the stressors from COVID-19 decrease?

Another consideration for future research is that distance learning involves the family, child, and teacher. We focused on the parent and child. However, what the teacher does is equally important. In a separate study (Sonnenschein & Stites, *in press*), we collected data from a separate sample of 105 preschool teachers during this time period. Seventy-two percent of the teachers taught at private prekindergartens; the remainder taught at publicly funded preschools (e.g., Head Start). Teachers reported many of the concerns that parents had. They reported not having sufficient training or supplies to deliver online lessons, and zoom lessons not being developmentally appropriate for preschoolers. They also noted that parents did not have sufficient time available to assist their children.

Another consideration is that the sample of parents in the current study was educationally advantaged. What would have happened with a sample with more limited education and perhaps less access to technology? The latter was something that teachers in our study (Sonnenschein & Stites, *in press*) who worked with low-income families said was a significant issue. Teachers (Sonnenschein & Stites, *in press*) also reported that their ability to provide lessons for their students was limited by stressors they were experiencing.

These data were collected in May 2020, when teachers and school systems had not had much chance to prepare for distance learning. It is possible that there were changes in the nature, type, or amount of instruction and activities as teachers and parents become more familiar with this type of learning venue. Future research should investigate teachers’ and parents’ practices later in the pandemic (see Barnett & Jung, 2021).

It also would be interesting to collect data about the children’s views of their participation in distance learning. How well children learn is really the result of what they are taught and their active participation in the process.

Parents talked about their children doing language arts, mathematics, art, science, and so on. However, instruction can be multidisciplinary. For example, teachers can use art projects to teach children about mathematics. We were not able to discern that from the parents’ responses. If such types of instruction occurred, we may have underestimated instruction in some domains. Note, however, that instruction in science, art, and music were mentioned far less frequently than in the other domains.

### Policy or Practice Implications

The COVID-19 pandemic has resulted in significant losses in learning opportunities for preschoolers (Barnett & Jung, 2021; Tout, 2021). This is due to teachers not necessarily being sufficiently trained and/or not having access to appropriate technology (Sonnenschein & Stites, *in press*), parents having limited time and some difficulties with technological expertise, and preschool children not necessarily being interested in or attentive to online distance learning (Abuhammad, 2020). School administrators should consider implementing structural supports for both parents and teachers related to technology. Teachers have reported needing more training on the platforms used to provide distance learning such as Zoom and Google classroom and, quite simply, how to teach in a digital manner (Sonnenschein & Stites, *in press*). Even as schools return to a traditional format, professional development related to both the technology and pedagogy of distance learning is needed. It is likely that virtual learning will remain in place in the future in some form whether it be for weather related closures, future crises, or simply parents who choose a virtual format for their children.

Parents also need support. Administrators need to provide parents with technology (e.g., tablets, laptops, etc.) but also resources for free or low-cost internet access. We recommend administrators maintain resource guides with phone numbers and website links that parents can use to access low or no cost internet through either government programs or major service providers (e.g., Comcast). These resources are in addition to having computers or tablets available to share with families.

Children who enter kindergarten following the COVID-19 crisis may need additional support in all academic areas but particularly mathematics and social/emotional skills given that parents are reporting lower levels of activities in these domains during distance learning. This has significant implications for teacher educators. Teacher educators should consider on-going professional development for teacher candidates, as well as in-service teachers, related to supporting mathematics conceptual understanding, particularly for children who may have missed out on critical foundational skills due to the pandemic.

Teacher educators should also consider implementing professional development focused on supporting the social skills development of young children who missed more than a year of social emotional development. An ability to get on well with others is critical for in school learning, the normative school context. Thus, this should be an important focus of children's learning as we move ahead.

### Disclosure Statement

No potential conflict of interest was reported by the author(s).

### ORCID

Michele L. Stites  <http://orcid.org/0000-0003-0343-4595>

### References

- Abuhammad, S. (2020). Barriers to distance learning during the COVID-19 outbreak: A qualitative review from parents' perspective. *Heliyon*, 6(11), e05–482. <https://doi.org/10.1016/j.heliyon.2020.e05482>
- Ansari, A., Pianta, R. C., Whittaker, J. V., Vitiello, V. E., & Ruzek, E. A. (2020). Persistence and convergence: The end of kindergarten outcomes of pre-K graduates and their nonattending peers. *Developmental Psychology*, 56(11), 2027–2039. <https://doi.org/10.1037/dev0001115>
- Ansari, A., Pivnick, L., Gershoff, E., Crosnoe, R., & Orozco-Lapray, D. (2020). What do parents want from preschool? Perspectives of low-income Latino/a immigrant families. *Early Childhood Research Quarterly*, 52, 38–48. <https://doi.org/10.1016/j.ecresq.2018.08.007>
- Bao, X., Qu, H., Zhang, R., & Hogan, T. P. (2020). Modeling reading ability gain in kindergarten children during COVID-19 school closures. *International Journal of Environmental Research and Public Health*, 17(17), 6371. <https://doi.org/10.3390/ijerph17176371>

- Barnett, W. S. (1995). Long-term effects of early childhood programs on cognitive and school outcomes. *The Future of Children*, 5(3), 25–50. <https://doi.org/10.2307/1602366>
- Barnett, W. S., & Camilli, G. (2002). Compensatory preschool education, cognitive development, and “race”. In J. M. Fish (Ed.), *Race and intelligence: Separating science from myth* (pp. 369–406). Lawrence Erlbaum Associates Publishers.
- Barnett, W. S., & Frede, E. (2010). The promise of preschool: Why we need early education for all. *American Educator*, 34(1), 21–29. <https://doi.org/10.2307/1602366>
- Barnett, W. S., & Jung, K. (2021). *Seven impacts of the pandemic on young children and their parents: Initial findings from NIEER's December 2020 Preschool Learning Activities Survey*. National Institute for Early Education Research.
- Barnett, W. S., Jung, K., Friedman-Krauss, A., Frede, E. C., Nores, M., Hustedt, J. T., & Daniel-Echols, M. (2018). State prekindergarten effects on early learning at kindergarten entry: An analysis of eight state programs. *AERA Open*, 4(2), 1–16. <https://doi.org/10.1177/2332858418766291>
- Bassok, D., Latham, S., & Rorem, A. (2016). Is kindergarten the new first grade? *AERA Open*, 1(4), 1–31. <https://doi.org/10.1177/2332858415616358>
- Blevins-Knabe, B. (2016). Early mathematical development: How the home environment matters. In B. Blevins-Knabe & A. M. Berghout (Eds.), *Early childhood mathematics skill development in the home environment* (pp. 7–28). Springer International. [https://doi.org/10.1007/978-3-319-43974-7\\_2](https://doi.org/10.1007/978-3-319-43974-7_2)
- Bodovski, K., & Farkas, G. (2007). Mathematics growth in early elementary school: The roles of beginning knowledge, student engagement, and instruction. *The Elementary School Journal*, 108(2), 115–130. <https://doi.org/10.1086/525550>
- Bronfenbrenner, U. (1979). *The ecology of human development*. Harvard University Press.
- Chapman, R. S. (2000). Children’s language learning: An interactionist perspective. *Journal of Child Psychology and Psychiatry*, 41(1), 33–54. <https://doi.org/10.1111/1469-7610.0054>
- Child Trends Databank. (2019). *Preschool and prekindergarten*. <https://www.childtrends.org/?indicators=preschool-and-prekindergarten>
- Claessens, A., & Engel, M. (2013). How important is where you start? Early mathematics knowledge and later school success. *Teachers College Record*, 115(6), 1–29. <http://www.tcrecord.org/Content.asp?ContentId=16980>
- Clements, D. H., Baroody, A. J., & Sarama, J. (2014). *Background research on early mathematics: Background research for the National Governor's Association (NGA) Center Project on Early Mathematics*. National Governor’s Association. <http://www.nga.org/files/live/sites/NGA/files/pdf/2013/1311SEME-Background.pdf>
- Collis, V., & Vegas, E. (2020, June 23). *Unequally disconnected: Access to online learning in the US*. Brookings. <https://www.brookings.edu/blog/education-plus-development/2020/06/22/unequally-disconnected-access-to-online-learning-in-the-us/>
- Dong, C., Cao, S., & Li, H. (2020). Young children’s online learning during COVID-19 pandemic: Chinese parents’ beliefs and attitudes. *Children and Youth Services Review*, 118, Article 105440. <https://doi.org/10.1016/j.childyouth.2020.105440>
- Duncan, G. J., Claessens, A., Huston, A. C., Pagani, L. S., Engel, M., Sexton, H., Dowsett, C. J., Magnuson, K., Klebanov, P., Feinstein, L., Brooks-Gunn, J., Duckworth, K., & Japel, C. (2007). School readiness and later achievement. *Developmental Psychology*, 43(6), 1428–1446. <https://doi.org/10.1037/0012-1649.43.6.1428>.supp
- Dworkin, J., Hessel, H., Gilske, K., & Rudi, J. H. (2016). A comparison of three online recruitment strategies for engaging parents. *Family Relations*, 65(4), 550–561. <https://doi.org/10.1111/fare.12206>
- Early, D. M., Iruka, I. U., Ritchie, S., Barbarin, O. A., Winn, D. C., Crawford, G. M., & Pianta, R. C. (2010). How do pre-kindergarteners spend their time? Gender, ethnicity, and income as predictors of experiences in pre-kindergarten classrooms. *Early Childhood Research Quarterly*, 25(2), 177–193. <https://doi.org/10.1016/j.ecresq.2009.10.003>
- Epstein, J. L. (2001). *School and family partnerships: Preparing educators and improving schools*. Westview Press.
- Galea, S., & Tracy, M. (2007). Participation rates in epidemiologic studies. *Annals of Epidemiology*, 17(9), 643–653. <https://doi.org/10.1016/j.annepidem.2007.03.013>
- Hatcher, B., Nuner, J., & Paulsel, J. (2012). Kindergarten readiness and preschools: Teachers’ and parents’ beliefs within and across programs. *Early Childhood Research & Practice*, 14(2), 1–17. <http://ecrp.uiuc.edu/v14n2/hatcher.html>
- Hill, C. E., Thompson, B. J., Hess, S. A., Knox, S., Williams, E. N., & Ladany, N. (2005). Consensual qualitative research: An update. *Journal of Counseling Psychology*, 52(2), 196–205. <https://doi.org/10.1037/0022-0167.52.2.196>
- Hirsch-Pasek, K., Yogman, M., & Golinkoff, R. M. (2020, July 21). *Should schools reopen? Balancing COVID-19 and learning loss for your children*. Brookings. <https://www.brookings.edu/blog/education-plus-development/2020/07/21/should-schools-reopen-balancing-covid-19-and-learning-loss-for-young-children/>
- Hoffman, J. A., & Miller, E. A. (2020). Addressing the consequences of school closure due to covid-19 on children’s physical and mental well-being. *World Medical & Health Policy*, 12(3), 300–310. <https://doi.org/10.1002/wmh3.365>
- Hoover-Dempsey, K. V., Walker, J. M. T., Sandler, H. M., Whetsel, D., Green, C. L., Wilkinson, A. S., & Closson, K. (2005). Why do parents become involved? Research findings and implications. *The Elementary School Journal*, 106(2), 105–130. <https://doi.org/10.1086/499194>

- The Hunt Institute. (2020). *COVID-19: State child care actions*. Duke University Stanford School of Public Policy. <https://hunt-institute.org/covid-19-resources/state-child-care-actions-covid-19>
- Lau, E. Y. H., & Lee, K. (2020). Parents' views on young children's distance learning and screen time during COVID-19 class suspension in Hong Kong. *Early Education and Development*, 1–18. <https://doi.org/10.1080/10409289.2020.1843925>
- MacPhee, D., & Prendergast, S. (2019). Room for improvement: Girls' and boys' home environments are still gendered. *Sex Roles: A Journal of Research*, 80(5–6), 332–346. <https://doi.org/10.1007/s11199-018-0936-2>
- McCormick, M. P., Weissman, A. K., Weiland, C., Hsueh, J., Sachs, J., & Snow, C. (2020). Time well spent: Home learning activities and gains in children's academic skills in the prekindergarten year. *Developmental Psychology*, 56(4), 710–726. <https://doi.org/10.1037/dev0000891>
- Metaferia, B. K., Futo, J., Drew, R., & Takacs, Z. K. (2020). Parents' beliefs about play and the purpose of preschool education, preschoolers' home activity and executive functions. *Frontiers in Psychology*, 11, Article 1104. <https://doi.org/10.3389/fpsyg.2020.01104>
- New York City Department of Education. (2020). *Pre-K*. <https://www.schools.nyc.gov/enrollment/enroll-grade-by-grade/pre-k>
- Nguyen, T., Watts, T. W., Duncan, G. J., Clements, D. H., Sarama, J. S., Wolfe, C., & Spitler, M. E. (2016). Which preschool mathematics competencies are most predictive of fifth grade achievement? *Early Childhood Research Quarterly*, 36, 550–560. <https://doi.org/10.1016/j.ecresq.2016.02.003>
- Pace, A., Alper, R., Burchinal, M. R., Golinkoff, R. M., & Hirsh-Pasek, K. (2019). Measuring success: Within and cross-domain predictors of academic and social trajectories in elementary school. *Early Childhood Research Quarterly*, 46, 112–125. <https://doi.org/10.1016/j.ecresq.2018.04.001>
- Pianta, R. C., Barnett, W. S., Burchinal, M., & Thornburg, K. R. (2009). The effects of preschool education: What we know, how public policy is or is not aligned with the evidence base, and what we need to know. *Psychological Science in the Public Interest*, 10(2), 49–88. <https://doi.org/10.1177/1529100610381908>
- Pre-K Now. (2008). *National Snapshot: Pre-K across the country*. Reading Rockets. [https://www.readingrockets.org/article/pre-k-across-country#:~:text=Twelve%20states%20%E2%80%94%20Colorado%2C%20Iowa%2C,formulas%20\(as%20of%20FY2008\)](https://www.readingrockets.org/article/pre-k-across-country#:~:text=Twelve%20states%20%E2%80%94%20Colorado%2C%20Iowa%2C,formulas%20(as%20of%20FY2008))
- Prime, H., Wade, M., & Browne, D. T. (2020). Risk and resilience in family well-being during the COVID-19 pandemic. *American Psychologist*, 75(5), 631–643. <https://doi.org/10.1037/amp000060>
- Puccioni, J. (2015). Parents' conceptions of school readiness, transition practices, and children's academic achievement trajectories. *The Journal of Educational Research*, 108(2), 130–147. <https://doi.org/10.1080/00220671.2013.850399>
- Purpura, D. J., & Logan, J. A. R. (2015). The nonlinear relations of the approximate number system and mathematical language to early mathematics development. *Developmental Psychology*, 51(12), 1717. <https://doi.org/10.1037/dev0000055>
- Purpura, D. J., & Reid, E. E. (2016). Mathematics and language: Individual and group differences in mathematical language skills in young children. *Early Childhood Research Quarterly*, 36, 259–268. <https://doi.org/10.1016/j.ecresq.2015.12.020>
- Ramsook, K. A., Welsh, J. A., & Bierman, K. L. (2020). What you say and how you say it: Preschoolers' growth in vocabulary and communication skills differentially predict kindergarten academic achievement and self-regulation. *Social Development*, 29(3), 783–800. <https://doi.org/10.1111/sode.12425>
- Rimm-Kaufman, S. E., La Paro, K. M., Downer, J. T., & Pianta, R. C. (2005). The contribution of classroom setting and quality instruction to children's behavior in kindergarten classrooms. *The Elementary School Journal*, 105(4), 377–394. <https://doi.org/10.1086/429948>
- Russell, B. S., Hutchison, M., Tambling, R., Tomkunas, A. J., & Horton, A. L. (2020). Initial challenges of caregiving during covid-19: Caregiver burden, mental health, and the parent–child relationship. *Child Psychiatry & Human Development*, 51(5), 671–682. <https://doi.org/10.1007/s10578-020-01037-x>
- Schmidt, A., Kramer, A. C., Brose, A., Schmiedek, F., & Neubauer, A. B. (2020). *Homeschooling and affective well-being of parents and children during the COVID-19 pandemic: A daily diary study*. <https://psyarxiv.com/sntxz/>
- Sénéchal, M., & LeFevre, J. A. (2002). Parental involvement in the development of children's reading skill: A five-year longitudinal study. *Child Development*, 73(2), 445–461. <https://doi.org/10.1111/1467-8624.00417>
- Serpell, R., Baker, L., & Sonnenschein, S. (2005). *Becoming literate in the city: The Baltimore Early Childhood Project*. Cambridge University Press.
- Sonnenschein, S., Metzger, S., & Gay, B. (2018). Concerted cultivation among low-income Black and Latino families. In S. Sonnenschein & B. E. Sawyer (Eds.), *Academic socialization of young Black and Latino Child(ren): Building on family strengths* (pp. 39–60). Springer.
- Sonnenschein, S., Metzger, S. R., & Thompson, J. A. (2016). Low-income parents' socialization of their preschoolers' early reading and math skills. *Research in Human Development*, 13(3), 207–224. <https://doi.org/10.1080/15427609.2016.1194707>
- Sonnenschein, S., & Sawyer, B. E. (Eds.). (2018). *Academic socialization of young Black and Latino Child(ren): Building on family strengths*. Springer.

- Sonnenschein, S., Stapleton, L. M., & Metzger, S. R. (2014). What parents know about how well their children are doing in school. *The Journal of Educational Research*, 107(2), 152–162. <https://doi.org/10.1080/00220671.2013.788987>
- Sonnenschein, S., & Stites, M. L. (in press). Preschool teachers' views on distance learning during COVID-19. In O. Saracho (Ed.), *Contemporary perspectives in early childhood education*. Information Age Publishing.
- Spector, P. E. (2006). Method variance in organizational research: Truth or urban legend? *Organizational Research Methods*, 9(2), 221–232. <https://doi.org/10.1177/1094428105284955>
- Stavely, Z. (2018, December 13). *What California can learn from universal preschool in other states*. EdSource. <https://edsources.org/2018/california-can-learn-from-other-states-expanding-preschool/605969#:~:text=They%20include%20Oklahoma%2C%20West%20Virginia,all%204%2Dyear%2Dolds>
- Stites, M. L., & Brown, E. T. (2019). Observing mathematical learning experiences in preschool. *Early Child Development and Care*, 191(1), 68–82. <https://doi.org/10.1080/03004430.2019.1601089>
- Stites, M. L., Sonnenschein, S., Dowling, R., & Gay, B. (2021). Mathematics learning opportunities in preschool: Where does the classroom library fit in? *Early Education and Development*, 32(1), 66–81. <https://doi.org/10.1080/10409289.2020.1721403>
- Susperreguy, M. I., Burr, S. D. L., Xu, C., Douglas, H., & LeFevre, J.-A. (2020). Children's Home numeracy environment predicts growth of their early mathematical skills in kindergarten. *Child Development*, 91(5), 1663–1680. <https://doi.org/10.1111/cdev.13353>
- Tamis-lemonda, C. S., Luo, R., Karen, E., McFadden, K. E., Bandel, E. T., & Vallotton, C. (2019). Early home learning environment predicts children's 5th grade academic skills. *Applied Developmental Science*, 23(2), 153–169. <https://doi.org/10.1080/10888691.2017.1345634>
- Tout, K. (2021). *Childcare and COVID-19: Support children by investing in early educators and program sustainability* (SRCD Child Evidence Brief, 10).
- West, J., Denton, K., & Reaney, L. M. (2001). *The Kindergarten Year (NCES 2001–023)*, U.S. Department of Education, NCES. U.S. Government Printing Office.
- Whitaker, C., Stavelink, S., & Fear, N. (2017). The use of Facebook in recruiting participants for health research purposes: A systematic review. *Journal of Medical Internet Research*, 19(8), 1–11. <https://doi.org/10.2196/2Fjmir.7071>