Learning across boundaries:

how parents and teachers are bridging children's interests

FamLB

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The Joan Ganz Cooney Center at Sesame Workshop

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The Joan Ganz Cooney Center at Sesame Workshop
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executive summary

This report presents findings from separate surveys of 1,550 U.S. parents and 600 pre-K–8 teachers on whether, to what extent, and how U.S. children ages 3–12 are linking their learning experiences across home, school, and community settings. The inquiry paid particular attention to the ways in which caregivers and teachers support and, in some cases, impede the development of young children's interests and the learning associated with pursuing these interests. Focusing on differences across demographics, the developed environment, and socio-economic status while taking an equity perspective, findings highlight areas of weakness and strength in this ecosystem of connected learning, suggesting what we need to pay attention to if we are intent on facilitating seamless learning across boundaries.

Key findings

Learning in the community. From libraries and churches to cafes and laundromats, young children spend time in diverse settings around the community. In general, high-income children spend time in a greater variety of settings than middle- and low-income children, which suggests unequal participation in activities that can promote their cognitive, social, physical, and cultural development. High-income children are more likely to regularly visit sports facilities and low-income children are more likely to visit laundromats than one another. Of the 10 places parents could choose from, malls/stores are the only one that children of all income groups are equally likely to visit.

Learning in transit. Children spend significant stretches of their days in transit. Nearly all (97%) ride in cars regularly, with 43% of parents reporting that their child spends more than three hours per week in the car. What do children do during their daily drives? Older kids are more likely to play with mobile devices or read than younger kids, and younger kids are more likely to nap. White children are more likely to talk to their parents than Hispanic children are, and African American children are more likely than their White or Hispanic peers to play with mobile devices. Just over a fifth (22%) of parents reported that their child takes mass transit, with three-fourths of these parents reporting that their child spends less than three hours on trains, busses, or subways in the course of a week. Generally speaking, children talk, consume media, and sleep less on public transit than in cars.

Learning in digital realms. Children use media and technology in a variety of ways to extend and deepen their interests—searching the Internet for information, watching online videos to get better at a skill, playing the same video games at home and school, and creating things with digital tools. There are differences between racial/ethnic groups in how children go about each of these activities: with their parents, with peers, or alone. Hispanic parents are more likely than other parents to accompany their child in these endeavors, and African American children are more likely to do them alone.

Bridging roles. Adults bridge young children's interests and learning across time and place in various ways. We queried parents on four categories of bridging roles: connection (e.g., talking or learning about a child's interests), exploration (e.g., doing activities or reading together), curation (e.g., identifying digital/media resources or books), and extension (e.g., attending or transporting a child to events around the community). Parents play connection, exploration, and curation roles at about equal rates across most demographic markers. However, differences were detected by family income on extension roles. Teachers also bridge students' learning across time and place. Teachers serving language-diverse communities are more likely to read with, do activities of interest with, and assist students in finding print and digital media sources, compared to teachers serving less diverse communities.

The enrichment gap. Our data provide further evidence of what Duncan and Murnane (2011) coined the *enrichment gap*, the discrepancy between lower- and higher-income children's participation in sports, music, scouting, and other out-of-school activities associated with positive physical, cognitive, and socio-emotional outcomes. More than a quarter (27%) of low-income parents reported that their child hadn't participated in any of the 11 listed enrichment activities in the past year, compared to just 6% of high-income parents. Similar differences in non-participation also were found between Hispanic (25%) and White (17%) children, and children who live in rural (23%) versus suburban (16%) communities. These findings indicate that beyond the cost of these programs, social, cultural, and institutional factors may also account for lower rates of participation among certain groups.

Locating opportunities. Where do parents find out-of-school enrichment programs for their children? They most often count on the people they know in real life, including friends and family as well as more distant acquaintances like other parents. They also consult media-based resources like search engines and social media and, to a lesser extent, websites, newspapers, and e-mail listservs. Physical locations like libraries and community centers are less common sources of advice, simply because it doesn't occur to parents to consult these resources. High-income parents are more likely to seek advice from parents of their child's friends—which may provide access to a greater variety of enrichment opportunities to consider—than mid- and low-income parents. Low-income parents are more likely to consult family and friends than other parents, which may limit their purview of available opportunities in the wider community.

Parent-teacher communication. Parents and teachers are generally satisfied with their ability to reach one another with questions or concerns about a student. Four out of five parents are able to reach their child's teachers with questions or concerns with relative ease. Of the fifth of parents who find it difficult, urban, middle-income, and single parents are more likely than their counterparts to have this challenge. Parents who send their child to private school are also more likely to express difficulty contacting teachers than parents of public-school students. Two-thirds of teachers believe that the amount of communication they have with parents is just right; a third want more and 4% want less. The teachers who want more communication primarily attribute the disconnect to parents who fail to show up for in-person meetings and events. These findings align with parents' sentiments about in-person meetings, which they find less desirable/convenient than virtual modes of communication such as e-mail and messaging.

Feelings of connectedness. The extent to which both parents and teachers feel connected to their school communities may shape the nature and flow of learning across home and school. Four out of ten parents feel that their family is different from most of the families whose children attend their child's school; one in five pre-K–8 teachers find it difficult to relate to many of their students' families. Urban parents and teachers are more likely to feel different/dissimilar than those in rural and suburban communities. Parents and teachers in lower-income communities are also more likely to feel different/dissimilar than those in higher-income communities. Hispanic and African American parents admitted to feelings of dissimilarity at higher rates than White parents.

Implications

It's not all about money. This research highlights how some children have less access to out-of-school opportunities and venues that may benefit their learning, development, and later career prospects. But it also illustrates that the cost of these programs and places may not be the only reason why. While free or low-cost enrichment programs are increasingly available even in impoverished communities, the data suggest that parents may not be aware that these programs exist, or they may have difficulty locating ones that suit their child's interests and/or their family's budget, schedule, and transportation resources. Cultural differences may also play a role in terms of how much parents value school- versus out-of-school learning opportunities. We need to raise parental awareness of how these opportunities serve to connect and extend what children learn in school and at home and the availability of affordable and accessible programs.

Family funds of knowledge. Most teachers are aware of their students' out-of-school interests and support them in a variety of ways. Still, there is a disconnect between home and school, especially among teachers who find it difficult to relate to many of their students' families and among parents who feel alienated from the school community. In-person visits are one way that parents can share their families' "funds of knowledge"—the expertise based on their culture, experiences, and routines—which can build greater empathy between home and school and lead to better learning outcomes for students. However, our survey indicates that parents have difficulty attending these meetings. How might teachers use technological solutions, such as parent engagement apps, to tap into families' funds of knowledge?

What kinds of professional development supports are required to help teachers make the most of these tools for cultural knowledge sharing?

Beyond parents and teachers. While the surveys queried parents and teachers on the ways in which they support children's interests and learning across settings, findings point to other important actors in the learning ecosystem: the tech developers generating solutions to facilitate parent-teacher communications; the librarians providing information on programs available around town; the museums and parks offering free admission days to local families; and the press and media influencing what parents think about out-of-school learning. Our work suggests the need to engage out-of-school educators, civic institutions, city planners, the media/press, and technology developers in discussions with parents and teachers on bridging children's learning across settings.

background

The aim of the Families Learning Across Boundaries Project—FamLAB for short—is to create an ecosystem that can enable and encourage young children's learning across settings. We know from prior research that deeper forms of learning require prolonged and repeated periods of engagement, span varied contexts, and are driven by the individual child's passions and curiosities (Barron, 2006; Bruner, 1960; Renninger & Hidi, 2011; Ito et al., 2013). Learners who experience deeper engagement across multiple contexts and time also develop deeper expertise and identification with a domain, such as science or literacy. Unfortunately, many children do not have access to the people, resources, or time afforded by non-school settings to inspire and guide their interests. And other factors—such as their parents' or teachers' perceptions of learning—can also enable or impede the flow of their learning experiences across time and place (Bhanot & Jovanovic, 2005; Crowley, Callanan, Tennenbaum, & Allen, 2001; Drummond & Stipek, 2004).

Connected learning, according to the Connected Learning Alliance's website, "combines personal interests, supportive relationships, and opportunities. It is learning in an age of abundant access to information and social connection that embraces the diverse backgrounds and interests of all young people."[1] FamLAB aims to promote such learning among young children—which at present, is a reality for just a privileged few and only a hope for too many—and proposes to do so by better understanding the current state of connectedness of children living in the United States.

We aren't the only ones working on the connected learning problem. Rather, our work here was designed to build upon the progress made over the past decade by scholars like Mizuko Ito, Sonia Livingstone, William Penuel, Brigid Barron, Kevin Crowley, S. Craig Watkins, and others in three distinct ways.

First, whereas many of these scholars have primarily focused on adolescence through early adulthood, FamLAB studies younger children, specifically, ages 3 through 12. Children at these ages still depend on adults to expose them to new topics and guide them toward activities that help them build expertise (Rogoff, 2003; Renninger, 2009). Further, the Gallup Student Poll consistently finds in its annual survey of U.S. students that school engagement drops as students grow older; Figure 1 (page 8) displays findings from its 2016 poll. These trends suggest the need to work on repairing the disconnected ecosystem that the families of our youngest learners navigate. Doing so will help set youth on trajectories toward greater engagement in middle and late adolescence, and better align their school performance with their career aspirations (Skorikov & Vondracek, 2007).

[1] Retrieved from https://clalliance.org/about-connected-learning/

Figure 1

Student engagement by grade, Gallup Student Poll 2016

■ % engaged
■ % not engaged
■ % actively disengaged

Percentages may not appear to add up to 100% due to rounding.

	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
% engaged	74%	67%	54%	45%	40%	33%	32%	34%
% not engaged	18%	23%	28%	31%	34%	34%	35%	34%
% actively disengaged	8%	11%	11%	24%	26%	33%	34%	32%
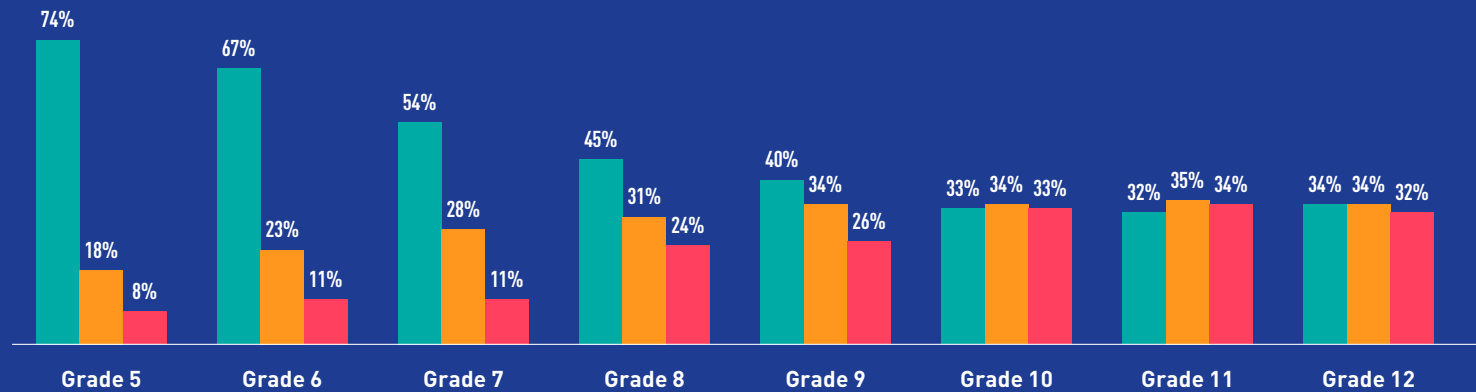
Second, most of the research to date on connected learning has been qualitative or regional in nature. We at FamLAB have taken many of the insights 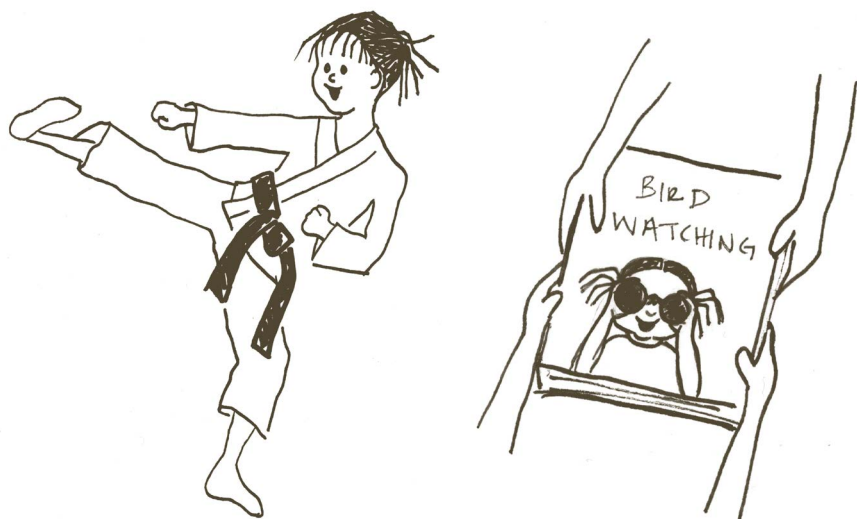gleaned from this regional work to inform the design of national surveys that can provide data on what learning looks like across the United States, and in communities where researchers haven't yet visited. For instance, we included questions in our surveys to measure the extent to which parents and others engage in the "brokering" roles that other scholars have identified in their local, qualitative studies among other demographic groups (e.g., Barron, Kennedy, Takeuchi, & Fithian, 2009; Ching, Santo, Hoadley, & Pepper, 2016).

Finally, we choose to use the verb "bridge" to describe the role that parents, teachers, and other adults play in supporting young children's learning across time and place. Children do the *connecting* as they stitch together their learning experiences and deepen their engagement over time, but adults do the *bridging* as they structure the conditions of connected learning. In this way, adults are like the *architects* or the *engineers* who design and build the infrastructures that can facilitate such learning.

Bridging entails a wide range of activities, from taking a child to the library to check out books on her bird-watching hobby, to signing her up for taekwondo. It can also include driving her to and from taekwondo practice and helping her make connections between the hummingbirds in the library books and the ones they spotted last week in their backyard. A teacher can also bridge a child's learning by keeping her parents posted on what she's learning during school hours, and by suggesting they sign her up for a Girl Scout troop where she can earn a bird-watching badge. Librarians, coaches, faith leaders, older siblings, grandparents, and many others in the community can also broker, inform, drive, teach, introduce, and support children in ways that help them connect their passions and interests across time and place.

To facilitate such connecting and bridging and to fortify an ecosystem that can support children's learning across home, school, and out-of-school settings and over sustained periods of time, we must first understand whether, to what extent, and how children are linking their learning experiences across three locales of interest: home, school, and community settings. And that is the purpose of our survey research with parents and teachers here. This research aimed to illuminate:

+ where children are learning and with whom;
+ how children are using technology to extend their learning beyond a single setting;
+ what roles parents and teachers are playing in bridging children's learning across settings, and the extent to which they are working together to do so;
+ which attitudes, beliefs, and norms appear to facilitate or impede the bridging of learning across settings; and
+ how all of the above might vary by income, community setting, child age, and family background.

We used survey methods to answer these questions and crafted our inquiry around three interrelated factors to paint a more comprehensive picture of whether, to what extent, and how children are linking their learning experiences across home, school, and community with adult support:

1. *Contexts for interest development:* These are the places and tools available to children and families that extend, enhance, or motivate learning. Besides home and school, they include local institutions such as libraries and community centers, and access to technological devices and systems.
2. *Bridging practices:* While more durable forms of learning are typically driven by a child's own interests, younger kids especially need adults to help nurture and guide them. This study focused on identifying the ways in which the adults in children's lives both intentionally and unintentionally help bridge children's interests from one experience to the next.
3. *Awareness and perceptions:* The ways in which parents, teachers, and other adults of influence perceive of available resources can shape how they encourage or dissuade children from pursuing them. And their beliefs about learning—what constitutes learning, where it happens, and under what circumstances—influence the nature and extent of their bridging practices.

This report highlights areas of both weakness and strength in this ecosystem of connected learning, suggesting what we need to pay attention to if we are intent on facilitating seamless learning across boundaries. We have organized findings by the factors outlined above and offer implications for in- and out-of-school educators, media and technology developers, and policymakers.

It is worth noting that the data presented in this report are based on parent and teacher self-reports and are therefore prone to under- or over-estimation, especially on inquiries about children's activities or behaviors that respondents cannot always observe directly. Furthermore, most surveys suffer from some amount of "social desirability bias," which is the tendency of respondents to answer questions in ways that will paint them in a better light (Edwards, 1957). Even though respondents of this survey were assured anonymity, and few, if any, questions were of a potentially embarrassing nature, we urge readers to keep the limitations of self-reported data in mind as they interpret findings.

Study design and methods

Researchers from the Joan Ganz Cooney Center and New York University worked with VeraQuest, a survey design firm that provides access to a national online panel, to recruit and administer the separate surveys of parents and teachers. The two surveys included a number of parallel, if not identical, questions to enable comparisons between the two populations. Note, however, that parent and teacher responses are not directly linked: in other words, the teachers recruited to take the survey did not teach the children of the parents we queried.

Parent survey
VeraQuest fielded the survey of 1,550 parents of 3–12-year-old children in August of 2017. Quotas for African American and Hispanic parents were set at 200 each, upon which VeraQuest derived this total target sample size of 1,550, approximating the U.S. population in terms of race, geographic region, and child age and gender. The sample included adequate proportions of

respondents by income group and community setting, as indicated in Figure 2. Fathers comprised 45% of the sample, and 16% of parents identified as single and raising the child alone. Data were weighted so that key subgroups (e.g., income groups, racial/ethnic groups) resembled their true proportions in the U.S. population.[2] The survey comprised about 40 multiple-choice questions and took 25 minutes to complete. We asked parents to focus on just one child throughout the survey, and to identify two of that child's interests, which allowed us to trace those interests in and beyond the home.

Figure 2

Parent survey sample

Household income

42%   Less than $50,000
38% $50,000–100,000
18%   More than $100,000
       (2% declined to answer)

Race/ethnicity

13%   African American
23%   Hispanic
58%   White
5%   Other

Community setting:

24%   Rural
47%   Suburban
29%   Urban

Parent gender

45%   Male
55%   Female

Parent status

16%   Single

Teacher survey

VeraQuest fielded the survey of 600 pre-K through grade 8 teachers in October of 2017. The sample, shown in Figure 3, is geographically representative of the U.S. and evenly distributed by grade level. In addition, the proportion of teachers that identified working at schools with Title 1 status[3] is comparable to proportions obtained online from the National Center for Educational Statistics.[4] The survey comprised 35 multiple-choice questions and took 20 minutes to complete. We asked teachers to identify two popular interests among all of their students, and to keep those interests in mind while answering a set of questions about how those particular interests relate to their students' learning and development. This focus on two interests allowed us to make some comparisons with data from the parent survey.

In the analyses that follow, we designate families with total reported household incomes of less than $50,000 as low-income, those earning between $50,000 and $100,000 as middle-income, and those earning more than $100,000 annually as high-income. Statistical analyses were conducted in SPSS. Descriptive analyses for this study include frequency tallies, percentages, and means. We used cross-tabulations with chi-squared tests to determine differences between observed and expected frequencies in nominal or dichotomous items. Any differences mentioned below were found to be statistically significant at the $p < .05$ level.

Figure 3

Teacher survey sample

Teacher race/ethnicity

7%	African American
5%	Hispanic
82%	White
5%	Other

Teacher gender

11%	Male
89%	Female

Grade(s) taught

41%	K–2
42%	3–5
36%	6–8

School type

88%	Public
7%	Private
5%	Parochial

Community setting

28%	Rural
46%	Suburban
26%	Urban

School Title 1 status

59%	Title 1
37%	Not Title 1
4%	Not sure

[3] Title 1-designated schools comprise higher proportions of low-income students and receive supplemental federal funds to improve curriculum and instruction, counseling, and parental involvement and to increase staff. To qualify as Title 1 school, at least 40% of the students must be considered low-income.

[4] See https://nces.ed.gov/fastfacts/display.asp?id=158.

findings

Contexts for interest development

When we think of where children learn, home and school come to mind first. But learning happens everywhere. And practically every locale a child visits in the course of a day can provide the social, material, and/or intellectual supports to propel her curiosities and passions. Here we explore some of the less obvious contexts for learning, including community institutions, modes of transportation, and digital spaces.

Community
We presented parents with a list of common locales outside of home and school and asked them to indicate how often their child visits each, with options ranging from "never" to "several times a week or more." Figure 4 indicates the percentage of parents who say their child visits these places at least monthly. Keep in mind that while children are as likely to visit a shopping mall (82%) as parks and other outdoor spaces on *at least a monthly* basis, rates differ when examining visitation on a *several times per week* basis. See Figure 5 for a comparison of select locales.

Figure 4

Where children spend time in the community on at least a monthly basis

83% **Outside, around the neighborhood**

82% **Parks and other outdoor spaces**

82% **Shopping mall or stores**

75% **Restaurant or café**

65% **Neighbor or friend's house**

54% **Sports facility, gym, or playing field**

52% **Library**

46% **Church, temple, or mosque**

24% **Afterschool program**

15% **Museum**

12% **Laundromat**

N = 1,550

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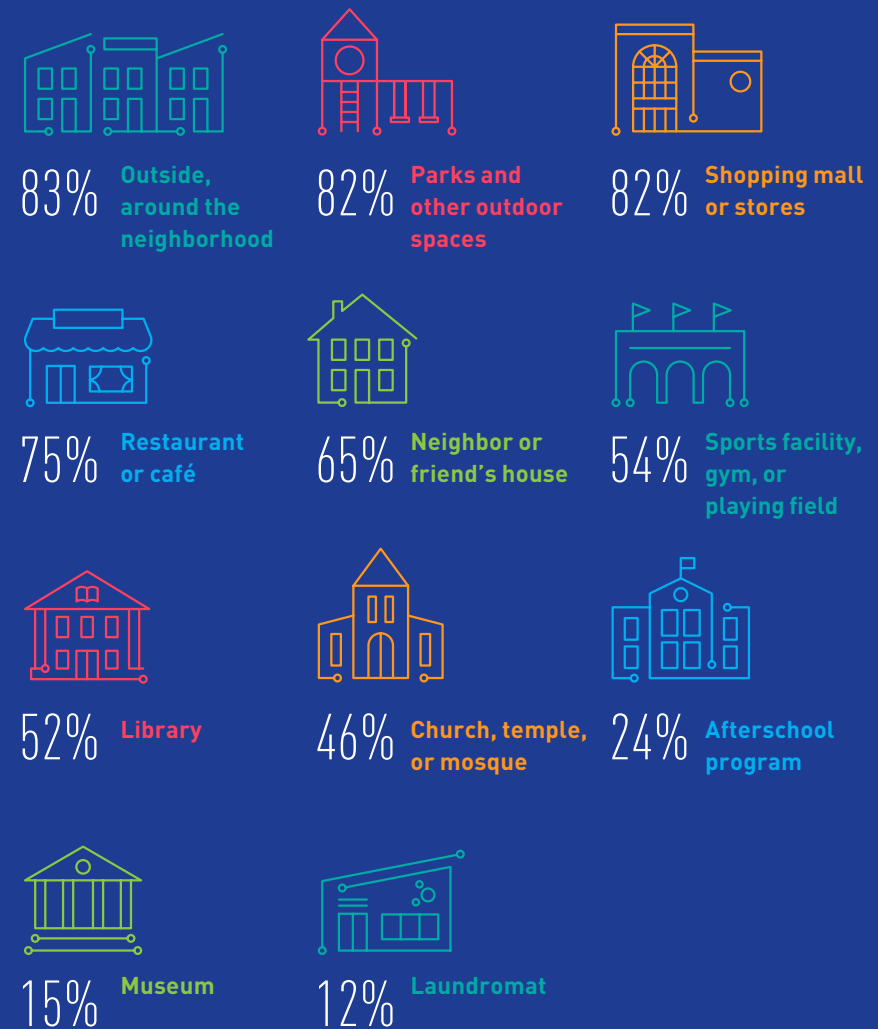
Figure 5

How often children visit certain locales

■ % several times a week
■ % about weekly
■ % about monthly

Percentages may not appear to
add up to 100% due to rounding.

We found differences in how parents from rural, suburban, and urban communities responded to this question. For instance, fewer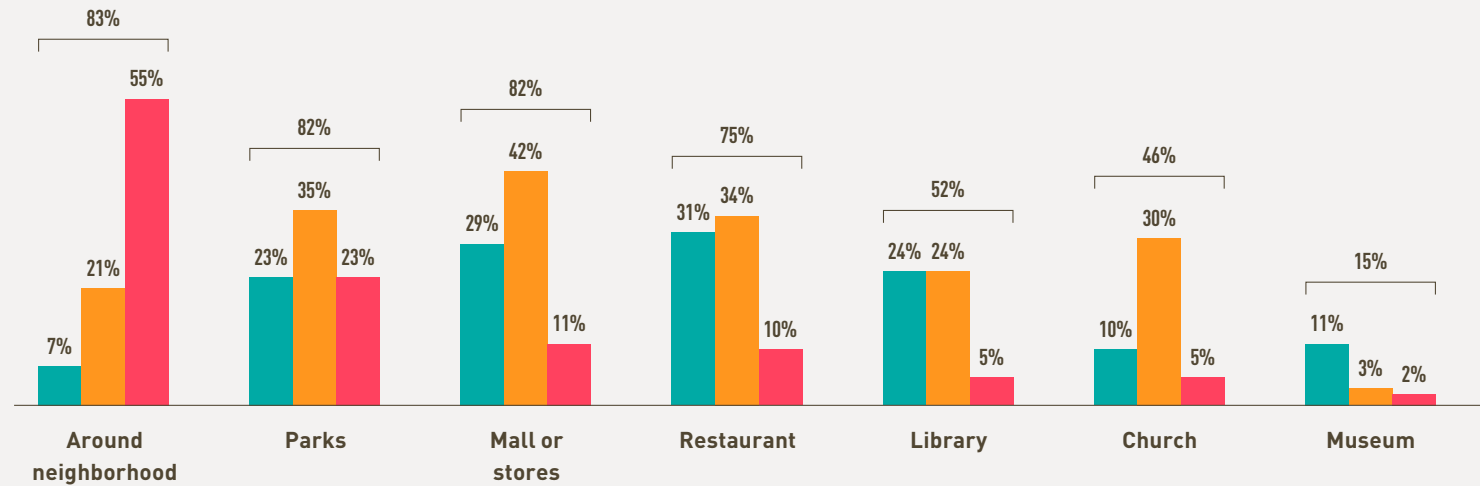 rural parents indicated that their child visits afterschool programs (20%) and museums (12%) at least monthly than urban parents did (27% and 19%), likely reflecting the availability of these resources in their communities. Children from urban families (21%) are more likely to visit laundromats at least monthly compared to their rural and suburban counterparts (8% and 9%), both of whom are more likely to have washing machines at home. Urban children are also less likely to spend time outside in the immediate vicinity of their homes than suburban and rural children (77% vs. 86% and 84%), which may reflect parental concerns about neighborhood crime (Moore et al., 2010; Valentine & McKendrick, 1997).

Even more differences emerged between income groups, shown in Figure 6. In fact, shopping malls and stores are the only places that children of all income groups are equally likely to visit on a monthly basis. In general, high-income children are more likely than mid- and low-income children to visit all of the listed places, with the exception of laundromats, which low-income children visit more often. Sports facilities like gyms and playing fields are where we see the greatest discrepancy between high- and low-income children, at 69% versus 44%, a 25% spread. Also notable is the gap between high- and low-income children who visit their neighbors' houses at least monthly, at 77% and 59%, respectively. Research by other scholars suggests that these differences

High-income children spend time in a greater variety of settings than middle and low-income children do.

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may be due to family circumstances (e.g., parents who work full-time, parents who are divorced, families in areas of high neighborhood crime) and/or culturally based norms around play dates, sleepovers, and other parent-organized social visits (Frankel & Mintz, 2011; Lareau, 2003; Outley & Floyd, 2002).

Implications

+ High-income children visit a greater variety of places in the community than low-income children, which suggests unequal participation in activities that can promote their cognitive, social, physical, and cultural development. But why fewer low-income children visit certain locales isn't just based on expense: libraries, parks, and places of worship, for instance, are typically free of charge, and museums often sponsor free days so that community members can also

Figure 6

Differences by income, places visited at least monthly

Place	Low-income	Mid-income	High-income
Outside, around neighborhood	80%[a]	84%[b]	89%[c]
Parks, outdoor spaces	80%[a]	82%[a,b]	87%[b]
Restaurant or café	68%[a]	77%[b]	85%[c]
A neighbor/friend's house	59%[a]	67%[b]	77%[c]
Sports facility, gym, field	44%[a]	59%[b]	69%[c]
Library	48%[a]	55%[b]	56%[b]
Church, temple, or mosque	40%[a]	48%[b]	54%[b]
Afterschool program	22%[a]	23%[a]	35%[b]
Museum	14%[a]	15%[a,b]	20%[b]
Laundromat	16%[a]	10%[b]	7%[b]

Statistically significant differences at p < .05 level are indicated by differing letters in superscript.

attend. In conceiving of solutions to narrow this participation gap, we need to consider other factors, such as access to affordable/convenient transportation, safety, cultural norms/values, and to whom and how no- and low-cost events are promoted in the community.

+ As discouraging as it is to see low-income children visit a more limited set of locales around town than their more advantaged counterparts, these data highlight where we might reach target populations with enrichment activities. While parks, shopping malls, and even restaurants and cafés may not seem like obvious places to offer learning content, these are places children in cities, suburbs, and townships, and across low-, middle-, and higher-income groups visit on a regular basis. Furthermore, if the aim is to target more traditionally underserved segments of the population, we might look to places like laundromats to fill with family-facing materials so that parents and children have something to do and learn together while waiting for their wash and dry cycles to complete. Programs like Chicago's Laundromat Story Time, Wash and Learn, and the Laundromat Library League are already providing such services.

In transit

We know that children spend significant stretches of their days at home and school and, based on the data presented above, in various places around the community too. But we rarely think about the time they spend traveling between settings, and how transit vehicles themselves also offer the space and occasion to learn. We therefore asked parents a series of questions about their child's transportation activities, shown in Figure 7.
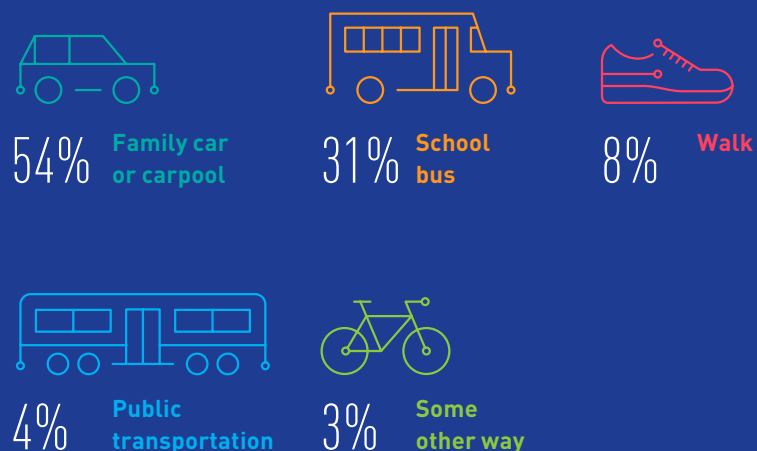
Each mode of transportation provides a distinct context for communication and development. In the family car, for instance, parent and child can have focused conversations. School busses allow for peer interaction and play. Walking to school also supports parent-child or peer-to-peer talk with the side benefit of physical exercise. And on public transportation, where a parent doesn't have to mind the wheel, adult and child can read something together—or separately—or even nap. Given the range of opportunities afforded by each mode, it's worth exploring how certain groups differ in their transportation routines.

Children ages 3–5 are far more likely to get to school by family car or carpool (70%) than both 6–8-year-olds (52%) and 9–12-year-olds (45%) and, conversely, less likely to ride in a school bus (17% vs. 34% and 38%, respectively). As seen in Figure 8, more rural children (44%) ride school busses than their urban and suburban peers (26% and 28%), which means fewer need to be transported by family car (46% vs. 55% and 57%). Urban kids are more likely than both rural and suburban kids to take public transportation (11% vs. 5% and 8%) and walk to school (6% vs. 2% and 3%). These patterns reflect geographic characteristics of the community, and the transportation infrastructures that have been erected to accommodate them. For instance, schools in densely populated cities are more closely spaced and therefore within closer proximity to people's homes than they are in suburban or rural communities, where schools are less likely to be within walking distance or located along public transportation lines. Sparsely populated rural communities have set up school bussing systems to spare parents from having to drive their children dozens of miles to and from school each day, which can impinge upon parents' work schedules.

Figure 8

How kids living in different settings get to school

	Rural	Urban	Suburban
🚗	46%	55%	57%
🚌	44%	26%	28%
👟	5%	11%	8%
🚈	4%	6%	3%
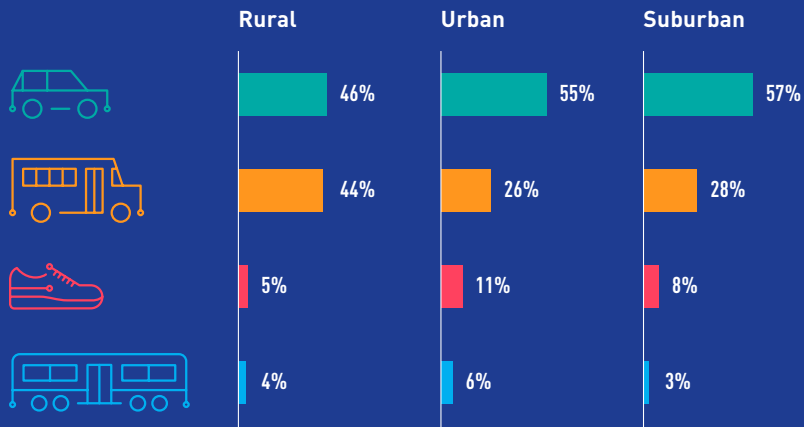
N = 1,432; parents of children who attend school or preschool

Figure 9

Time children spend in cars owned or borrowed by family

N = 1,550

- 8% More than 6 hours per week
- 35% 3 to 6 hours per week
- 54% Less than 3 hours per week
- 3% None
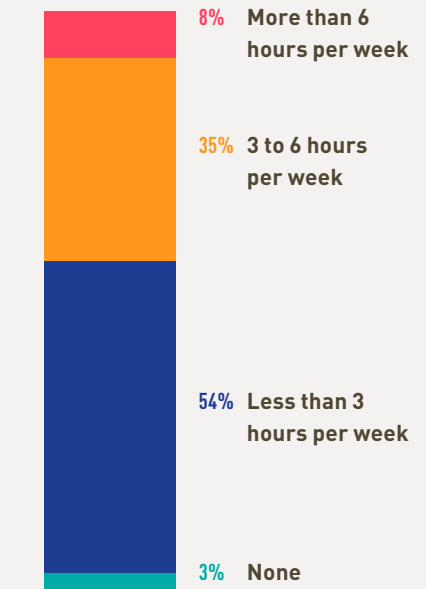
43% of U.S. children spend more than 3 hours per week riding in cars.

Low-income children are less likely to get to school by car or carpool than their mid- or high-income peers, at 46% vs. 55% and 57%. While children of African American, White, and Hispanic background travel to school by car or carpool at about equal rates, Hispanic children are more likely to walk than their White or African American peers, at 11% vs. 8% and 6%.

97% of kids regularly ride in family-owned or borrowed cars

22% of kids ride public transportation around town

Children spend significant stretches of their days in transit not only to and from school, but also between afterschool activities and child care settings, and running errands with parents. Nearly all U.S. children ages 3–12 ride in cars regularly (97%), with 43% of parents reporting that their child spends more than three hours per week in the car; time in cars is shown in Figure 9. Suburban children are more likely than rural ones to spend more than three hours in the car weekly (45% vs. 39%), possibly reflecting rural children's lower rates of participation in out-of-school activities (Afterschool Alliance, 2016; Frey, 2015) and reinforcing the suburban "soccer mom" stereotype. African American children are also more likely than White children to spend more than three hours in the car on a weekly basis (50% vs. 42%). We found no differences between younger and older children on these measures.

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Figure 10

Time children spend in public transportation

(bus, subway, etc.)

6% **More than 6 hours per week**

21% **3 to 6 hours per week**

74% **Less than 3 hours per week**

22% **1 to 2 hours per week**

20% **30 to 59 minutes per week**

32% **Less than 30 minutes per week**

N = 341

Figure 11

What children do while in transit

(select all that apply)

■ **Cars (N = 1,499)**   ■ **Public transit (N = 341)**

Talk to you (or your spouse/partner)
68%
41%

Listen to music
49%
26%

Play with or watch a phone, tablet, or other mobile device
47%
32%

Play with or talk to siblings or friends
38%
29%

Sleep
15%
8%

Read
13%
16%

Nothing
1%
11%

Other
2%
3%

As illustrated in Figure 10, one in five parents (22%) report that their children make use of public transportation on a regular basis, at least one hour per week. Urban children are more likely to take public transit than suburban and rural children (34% vs. 17% and 18%), and African American and Hispanic are more likely to than White children (31% and 24% vs. 19%). We found no differences in use of public transit by family income.

The survey found the back seats of family cars to be lively locales of activity and conversation, with notable differences detected by demography. Predictably, older kids are more likely to play with mobile devices or read than younger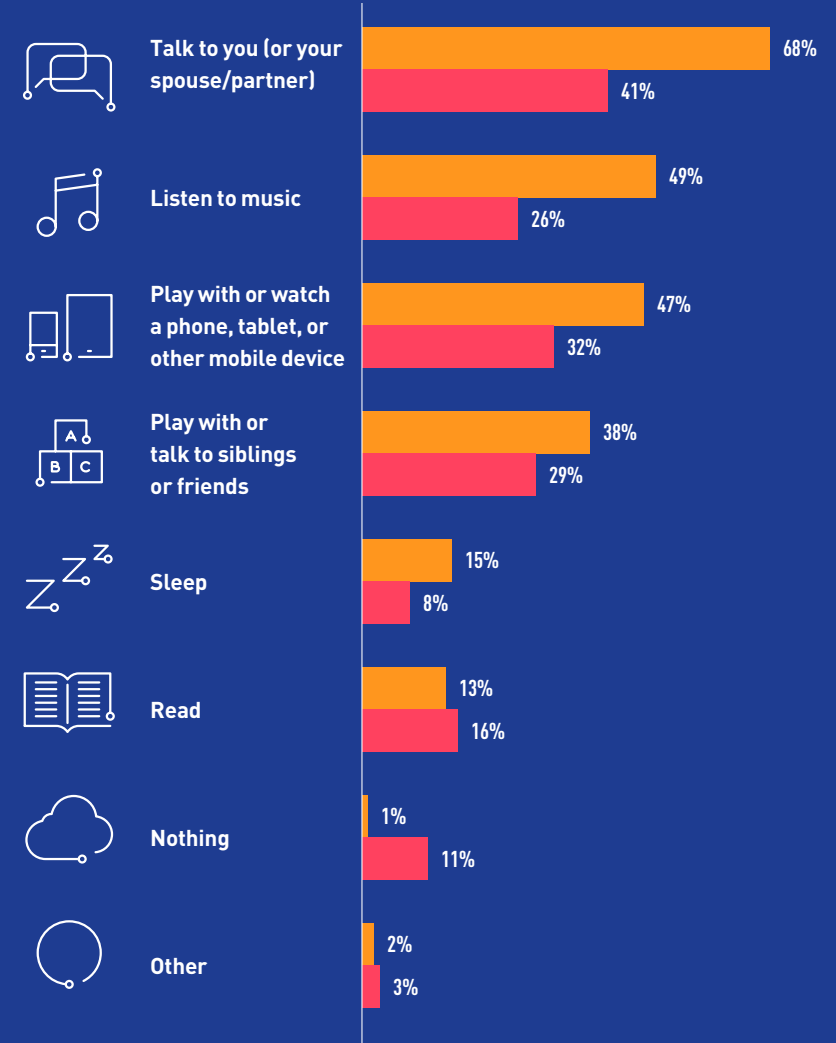 kids, and younger kids are more likely to nap. But there are differences that deserve further attention: White children are more likely to talk to their parents than Hispanic children are

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(70% vs. 62%), and African American children are more likely than their White or Hispanic peers to play with mobile devices in the car (55% vs. 46% and 47%). White children are also less likely to nap on drives than African American and Hispanic children (12% vs. 20% and 17%).

Generally speaking, children do more in cars than on public transit: they talk, consume media, and sleep more (see Figure 11). In fact, 11% of parents report that their child does nothing while riding public transit, compared to just 1% of parents who report the same in cars. Reading is the only activity that parents report as more frequent on public transit than in cars. With the exception of reading, which is a quieter, often solo activity, it seems that the privacy of the family car permits and/or promotes greater engagement with both people and media. However, trip duration may also influence what children do while on the go: children spend far less time on public transit than they do in cars, with three-quarters of parents reporting that their child spends fewer than three hours per week on busses and subways, and a third reporting fewer than 30 minutes. It's harder to sink into a story or conversation if you're hopping on and then off a bus just a few minutes later.

Implications
+ Children can spend hours in transit over the course of the week. While these unstructured occasions present opportunities for educational enrichment, it is also important for kids to have downtime, catch up on sleep, or perhaps even experience the pangs of boredom, which research has demonstrated can spur creativity (Harris, 2000; Mann & Cadman, 2014; Schubert, 1977). As such, we shouldn't aim to fill every second of their days with active stimulation and learning (Paul, 2019).

+ For some families, commutes are one of the few times during the day parents and children have for focused conversation, often replacing breakfast or dinnertime to catch up on each other's lives. Parents typically ask what their child is doing at school—though we know kids are loath to tell. But they can also inquire into the things their child is passionate about: what is it about their favorite YouTuber that has them hooked? What strategies are they considering to improve at basketball or baking? Parents can help deepen and sustain their child's learning around certain topics.

+ Our data reveal that African American and Hispanic children are more likely to nap in the family car than their White peers. Are they doing so to make up for the shorter durations of sleep they may be getting overnight (Combs, Goodwin, Quan, Morgan, & Parthasarathy, 2016; Crosby, LeBourgeois, & Harsh, 2005)? Whatever the reason, these naps may be beneficial for health and development, as shorter nightly sleep durations have been associated with obesity and other adverse health outcomes among young children (Cappuccio et al., 2008).

+ White children are also more likely to talk to parents in the car than Hispanic children, which may be attributed to a variety of factors, including cultural differences in parenting styles (Calzada, Fernandez, & Cortes, 2010), complex communication dynamics in dual language households (Hoff, 2013), and the fact that Hispanic children nap more often on drives. But lower rates of early parent-child talk have been associated with slower rates of vocabulary development (Hart & Risley, 1995), which can place children at a disadvantage for educational attainment later on (Brooks-Dunn & Markman, 2005; Hoff, 2013; Mancilla-Martinez & Lesaux, 2012). While we hesitate to suggest

solutions to encourage more parent-child talk during commutes for the reasons posed in prior bullet points, further ethnographic work could help us understand what works best for diverse families in commuting contexts.

+ Many children engage with media to endure boring commutes, so why not add to their selection of games that hone problem-solving or pique curiosity in something scientific? Or a multiplayer game that gets siblings to talk, share, and negotiate? Developers interested in creating media specifically for use on transit should consider how each mode of transportation offers different opportunities for interpersonal interaction and reflection, and how to customize for shorter versus longer rides.
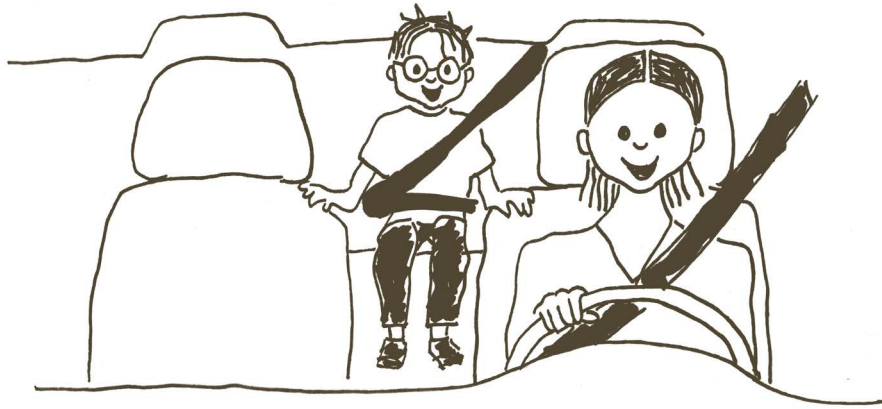
Digital realms

Emerging information and communication technologies (ICTs) are making it increasingly possible for children to extend their interests within and across settings. Some children can take school-issued laptops home to work on class assignments and read e-books for pleasure. They can search the Internet for information on topics that excite them, and test drive their new knowledge in various settings with various partners,

building layer upon layer of expertise. For these reasons and more, ICTs are being positioned as powerful bridging tools between both people and place (Ito et al., 2013). However, this potential depends on the extent to which these tools are available and appropriately deployed and, as we know, access and empowered uses of ICTs are not evenly distributed across all segments of the population (Rideout & Katz, 2016; Warschauer & Matuchniak, 2010). We therefore asked parents about their children's access to and use of technology and media as a means for cultivating their interests, shown in Figure 12.

Figure 12

Which of the following does your child have access to?

68% **A family or parent's** computer, tablet, phone, or mobile device

60% **His or her own** computer, tablet, phone, or mobile device

22% A computer/tablet issued by school for **use at school only**

15% A computer/tablet issued by school for **use at both school and home**

N = 1,550; select all that apply

Figure 13

Demographic differences in access to devices

	Low-income	Middle-income	High-income	White	African American	Hispanic
A **family or parent's** computer, tablet, phone, or mobile device	68%[a]	65%[a]	75%[b]	70%[a]	68%[a,b]	64%[b]
Their own computer, tablet, phone, or mobile device	61%	58%	58%	59%[a]	73%[b]	58%[a]
A computer/tablet issued by school for **use at school only**	21%[a]	21%[a]	29%[b]	24%[a]	29%[a]	19%[b]
A computer/tablet issued by school for **use at both school and home**	12%[a]	16%[b]	19%[b]	15%[a]	20%[b]	12%[a]

Statistically significant differences at p < .05 level are indicated by differing letters in superscript.

Children of all income groups possess their own devices at similar rates, but high-income children have greater access to parent or family devices as well as school-issued devices for school use compared to low- and middle-income children. In terms of race/ethnicity, White children are more likely to use parent/family devices than Hispanic children. More African American children possess their own devices than either White or Hispanic children, and they also have greater access to school-issued devices for home use than Hispanic children. Data for these income and ethnic groups are shown in Figure 13.

Notably, rural, urban, and suburban children access all types of devices at similar rates, and the proportion of parents who indicated that their children access none of these devices did not significantly differ by community setting, income group, or race/ethnicity. However, we caution readers from interpreting this finding as indicating the disappearance of the digital divide, as respondents of this survey are members of an online survey panel and necessarily have access to the hardware and Internet required to participate. Furthermore, research suggests that modern-day digital divides are perpetuated by issues of *quality* (e.g., of learning content, of social interactions around devices, reliable high-speed Internet access) as opposed to mere *access* to digital tools (Katz, 2017; Warschauer & Matuchniak, 2010; Watkins, 2011). While certainly narrowing, the digital divide persists in various forms, especially between the lowest and highest income groups in the United States, as well as between rural and non-rural populations (Anderson, 2017; Perrin, 2017).

While it may feel like progress for more than half of children in the 3–12 age range to possess their own tablets or phones, there is something to be said about the value of parents, children, and siblings sharing devices. When everyone in a household has their very own device, it produces "alone together" situations (Turkle, 2011), whereby parent and child have little incentive to interact around a single medium, as families did (and still do)

around TV sets or desktop computers. When there is reason to do things together around a device, it opens up opportunities to talk to one another, learn about each other's interests, and interact in general (Takeuchi, 2011; Takeuchi & Stevens, 2012).

Using media and technology to bridge learning across settings
It's one thing to have access to digital tools, but quite another to make use of them in empowering ways. We therefore identified four ways in which children may use digital tools and media to extend their interests across time and place— illustrated in Figure 14 (see pages 22-23)—and asked parents whether and how their 3–12-year-old engages in each.[5] The second column in the table describes arrangements of use among children who do participate in these activities— namely, alone, with an adult, or with a sibling or peer—and parents could select as many configurations as applicable.
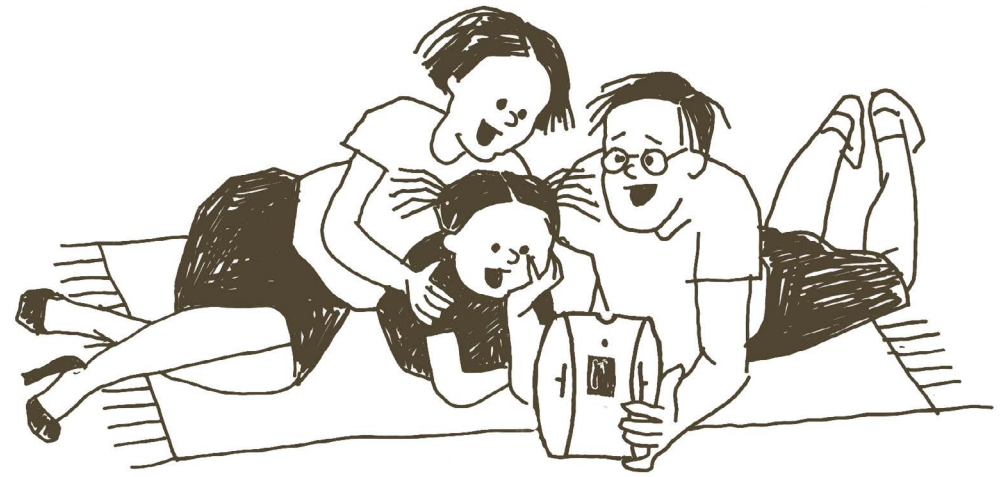
[5] We remind readers that these data are based on what parents *believe* their children are up to and may exclude what children do behind closed bedroom doors, at their afterschool programs, or anywhere else that parents are not privy to.

Figure 14

Using media and technology to bridge learning across settings

Gaming across settings

77%

of children play video games and apps that they also play at school

Teachers now assign students learning games to play during class time or as homework to play at home. Parents are also selecting, purchasing, or simply allowing their children to play educational games or apps at home. Regardless of where the gameplay originates, it's not uncommon for children to play the same game or app title at home and at school because they *want* to—not just because they have to. This erases some of the distinctions between home and school and learning and play that predated the digital age.

Social configurations of use

- Alone: 69%
- With parent/other adult: 40%
- With sibling/peer: 28%

Children of all races/ethnicities and income groups are equally likely to play the same game/app titles at home and school. However, a higher percentage of urban kids (81%) do so than suburban kids (74%). Urban kids are also more likely than both rural and suburban kids to play these games with a parent or other adult (44% vs. 35% and 39%). All children are equally likely to play alone or with friends/siblings.

Surfing for info

74%

of children search the Internet for information related to their interests

Search engines like Google empower children to independently acquire deep expertise on the topics that intrigue them. They can find answers to practically *any* question by entering the appropriate search terms—which, of course, young children aren't always equipped to do. Nor does the eager searcher always critically evaluate the reliability of their search results. They may even run into unsafe or unsavory sites along the way. This is why surfing with adults or older siblings and peers is almost always more fruitful than surfing alone (Livingstone & Helsper, 2008) and is, in fact, how 3–12-year-olds typically go about the task.

Social configurations of use

- Alone: 50%
- With parent/other adult: 64%
- With sibling/peer: 19%

While all children—regardless of race, income, or community setting—search the Internet for information related to their interests at about equal rates (i.e., 74%), they vary in how they do so: White children are more likely to surf with parents than African American children (67% vs. 55%), and African American children are more likely to search alone (63%) than their White (49%) or Hispanic peers (46%). Children from high-income households are also more likely to be independent searchers than those from middle- or low-income households (62% vs. 50% and 46%).

Figure 14

Using media and technology to bridge learning across settings (continued)

Watch, learn, do

73%

of children consult online learning tutorials so that they can get better at a skill or activity

According to Common Sense Media (Rideout, 2017), the average 0–8-year-old watches 17 minutes of online video (such as YouTube) per day, often to get better at something that is meaningful to them (Burgess & Greene, 2013). Two-thirds (64%) watch online videos intended to teach something (e.g., literacy, math); 38% watch how-to videos (e.g., cooking, LEGO); 34% watch "unboxing" videos, in which someone opens up and sometimes assembles or uses a new product for others to preview; and another 27% watch gaming videos, in which players record their gameplay for others to watch and potentially learn from.

Social configurations of use

54%	55%	19%
Alone	**With parent/other adult**	**With sibling/peer**
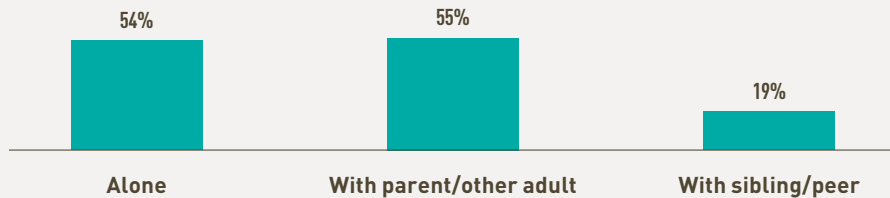
Urban children are more likely to watch video tutorials than suburban and rural children (79% vs. 70% and 72%), as are Hispanic children compared to White children (78% vs. 70%). Low- and high-income children are more likely to watch video tutorials than middle-income children (75% and 75% vs. 70%). Hispanic children are more likely to watch these videos with their parents than White children (58% vs. 55%), and African American children are more likely to watch alone than Hispanic children (61% vs. 48%).

Digital creation
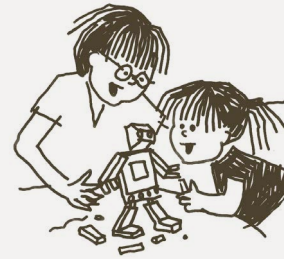
63%

of children create things using tech-based tools

Advances in computing technologies have made way for a *participatory culture* (Jenkins, 2006), whereby individuals can now create media content, rather than just consume it. Production media have become more kid-friendly, thanks to touchscreen interfaces, lower-cost mobile devices, and object-oriented programming tools, and now younger children are hosting their own YouTube channels, designing video games, and sharing their creations with the world. By contributing to the media landscape, children have opportunities to express their creativity, hone technical skills, test out possible identities, and cultivate relationships with mentors and like-minded peers (Jenkins, Clinton, Purushotma, Robison, & Weigel, 2006).

Social configurations of use

57%	50%	24%
Alone	**With parent/other adult**	**With sibling/peer**
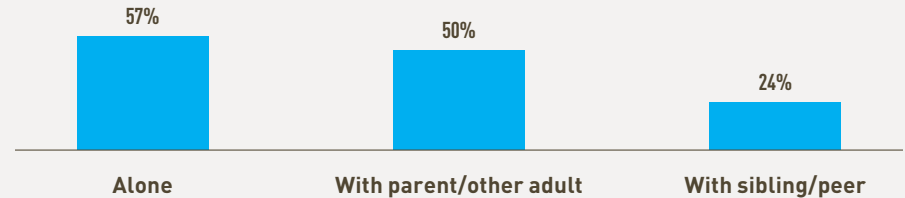
Urban children are more likely than suburban and rural children to create things with technology-based tools (68% vs. 61% and 60%), as are high-income children compared to low- and middle-income children (69% vs. 62% and 62%). Urban children are also more likely to do so with a parent or adult than rural children (52% vs. 45%), as are Hispanic children compared to White children (57% vs. 48%). African American children are more likely to create things alone than Hispanic children (61% vs. 48%).

As the data illustrate, certain interest-extending activities lend themselves to more solitary versus joint engagement among 3–12-year-olds. Kids are more likely to game across settings alone than they are with a parent but are less likely to surf the Internet without an adult by their side. These patterns of interaction are largely consistent with children's developmental trajectories and by adolescence, we know from complementary research that joint engagement with media shifts away from parents toward near-age peers (Allen, DiGiacomo, Van Horne, & Penuel, 2018; Ito et al., 2009; Ito et al., 2013). Furthermore, across the four interest-extending activities we asked parents about, Hispanic parents are more likely to accompany their child in these endeavors, and African American children are more likely to do them alone. Rideout and Katz (2016) found that African American parents worry less about threatening or inappropriate content on the Internet than White or Hispanic parents, which could, in part, explain African American children having more autonomy in their technological pursuits.

Implications

+ Might parental perceptions of the value or safety of these interest-extending activities and tools explain why Hispanic parents are more likely to accompany their children in using them? More qualitative methods of research are necessary to understand what drives these cultural differences.

+ While we have evidence that parental co-engagement is more advantageous to children's learning in the context of book reading and television viewing, these assumptions have yet to be tested when it comes to the highly connected and interactive tools available to kids today. How might situations involving *online* playmates and partners—a form of joint engagement not queried in our survey—foster

communication or collaboration skills of a different nature than afforded by co-located forms of joint engagement (Grimes & Fields, 2012)?

+ How might solo use of these tools cultivate independence and self-efficacy in children, as well as networking and experimentation skills? How might the short- and longer-term benefits of these skills and dispositions counter risks around privacy and safety? These questions are worth asking from an equity perspective, as not all children have access to parents who can guide them through their use of these tools in person. Fortunately, many out-of-school programs around the country have in recent years enlisted mentors who provide such guidance and inspiration to less-advantaged youth, and some have demonstrated success, including the Digital Youth Network in Chicago and the HIVE NYC Learning Network (Barron, Gomez, Martin, & Pinkard, 2014; Ching, Santo, Hoadley, & Peppler, 2016; Watkins, 2018).

Bridging Practices

Parent roles in cultivating children's interests
Earlier empirical work has described the ways in which parents support their children's growth across various realms, including language and literacy (e.g., Heath, 1983, Sénéchal & LeFevre, 2002), science (e.g., Zimmerman, Perin, & Bell, 2010), culturally valued practices (e.g., Rogoff, 2003), and technological fluency (e.g., Barron et al., 2009). This research has demonstrated how such parent involvement is generally positively correlated with children's school achievement (Fan & Chen, 2001). Parents also support their children's interests in a variety of ways. Even the most ordinary things parents do can spark or deepen a child's

interest in some topic or activity or sustain this interest over time and place (Leibham, Alexander, Johnson, Neitzel, & Reis-Henrie, 2005; Renninger, 2009).

To obtain a general sense of the variety and frequency with which parents support their children's interests, we presented them with a list of nine roles—derived, in part, from Barron, Kennedy, Takeuchi, and Fithian's (2009) taxonomy of parent roles—and asked them how often they do each with or for their 3–12-year-old. The list is by no means comprehensive. Rather, we selected these roles to represent four broader genres of parental bridging: *connection* through talking and learning; *exploration* through doing and reading; *curation* through identifying media and books; and *extension* through driving, taking, and attending. While talking and reading come first to mind as the types of things parents do to foster their children's interests, their less obvious roles of content curators, audience members, and chauffeurs can be as critical to setting children on trajectories toward expertise and mastery (Barron et al., 2009).

The data presented in Figure 15 indicate the proportion of parents that say they play these roles at *least weekly*, if not more often (e.g., several times a week or daily).[6] In general, connection and exploration roles are more commonly enacted than curation and extension roles, which makes sense within the at-least-weekly timeframe. Notably, more parents indicated helping their child find media content than print content on a weekly basis, at 68% vs. 61%. We speculate that the amount of media content for all varieties of platforms in homes these days (TV, tablets, game consoles, etc.) is likely to surpass that of print materials. As such, selecting what to watch, play, or read on these newer platforms may be a more frequent activity for parents.

[6] The full set of options included never, less than once a month, about once a month, about once a week, several times a week, and every day.

Figure 15

Parent roles in cultivating children's interests

■ Ages 3-5   ■ Ages 6-8   ■ Ages 9-12

Connection

92% **talk** with child about activities he/she does in places away from home
- 89%
- 92%
- 94%

81% **learn** something new from child that he/she learned someplace else
- 78%
- 83%
- 81%

Exploration

90% **do** any of child's favorite activities with him/her
- 96%
- 89%
- 87%

78% **read** books with child about his/her interests
- 92%
- 84%
- 63%

Curation

68% help child **find** apps, video games, movies, TV programs, or other media
- 69%
- 73%
- 64%

61% help child **find** books, comic books, magazines, or other print materials
- 65%
- 66%
- 54%

Extension

66% **drive or transport** child to events related to his/her interests
- 61%
- 63%
- 73%

58% **attend** practices, events, or performances
- 46%
- 61%
- 65%

43% **take** child to parks, museums, zoos, etc.
- 48%
- 42%
- 39%

N = 1,550; parents who enact these roles at least weekly

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Predictably, child age accounts for differences in the frequency with which parents enact these roles. For instance, parents read books more often with younger children and attend practices, events, or performances more often with older children. However, the patterns aren't always linear. The curation data, for instance, show slight upticks of activity among parents of 6–8-year-olds. We posit that the parents of the very young select books and media for them, and when children are literate enough, parents step in to help them in their selections. The 9–12-year-olds are more capable of choosing their own books and media and may also be less welcoming of their parents' help.

A few differences also emerged by income group. Just 58% of low-income parents say they transport their children to events at least weekly, compared to 68% of middle- and 78% of high-income parents. On a related note, 51% of low-income parents attend their children's practices, events, or performances, compared to 58% and 74% of middle- and high-income parents. Low-income parents are also less likely to take their children to parks, zoos, and other local institutions at least *weekly* than high-income parents—at 40% versus 50%—but these differences are less pronounced when we compare parents who take their

At least weekly, four out of five parents learn something new from their child that their child learned someplace else, at school or maybe even from a YouTube video. By explaining how something works to another individual— whether it be a friend, a younger sibling, or a parent—a child develops a deeper understanding of the process or phenomenon herself (Duran, 2017). These conversations connect the child's past experience to the present and to a context different from the one in which it originated.

kids out at least *monthly*, with 74% of low-income and 81% of high-income parents reporting so. The survey also asked parents who indicated that they *never or rarely* take their children to these local institutions why they do not and presented a set of explanations to choose from. The most popular explanation, selected by 37% of parents, is that doing so is too expensive, followed by lack of time, selected by 31%, shown in Figure 16.

Figure 16

Reasons why parents do not take their children to parks, zoos, and other local institutions

2%
Not sure how to do this

5%
Not necessary

6%
Child doesn't want my help

6%
Someone else does this

37%
Doing this is too expensive

14%
Not applicable

31%
Don't have enough time
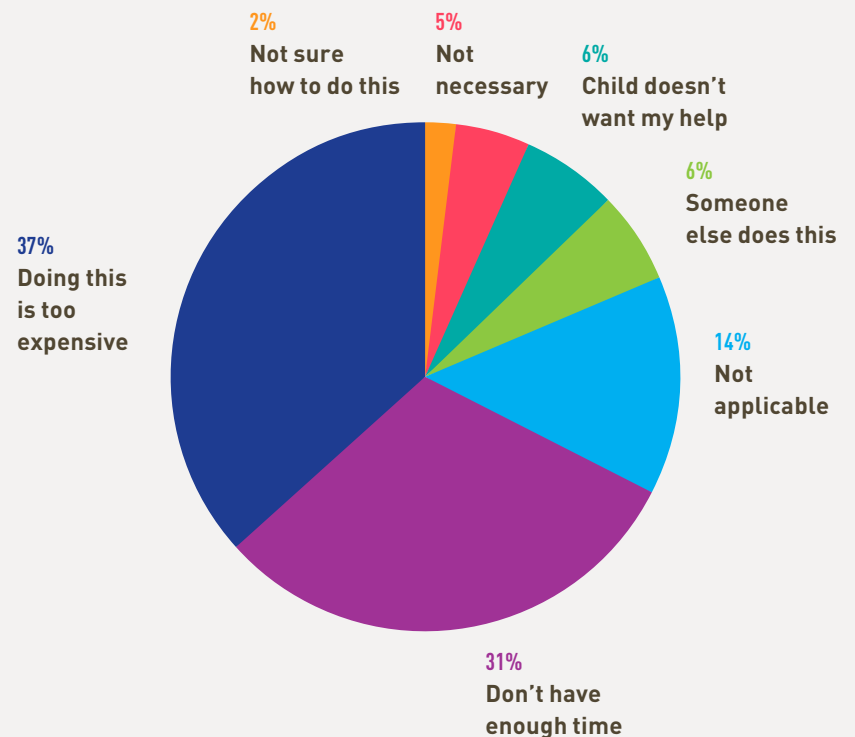
N = 365; parents who said they *rarely or never do*

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Figure 17

Why parents rarely or never take their children to parks, zoos, and other local institutions, by income

■ **Do not have enough time**   ■ **Doing this is too expensive**
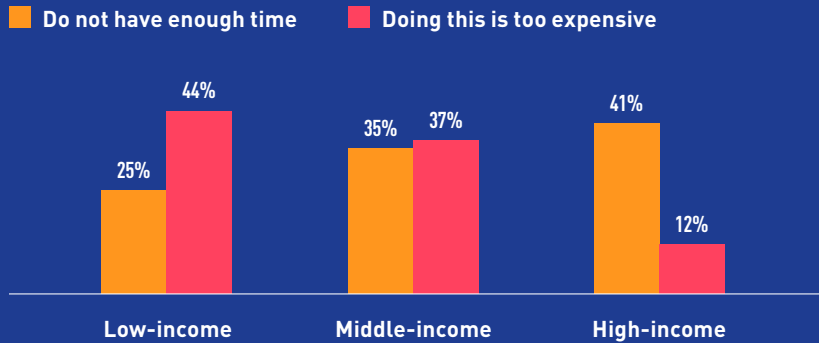
N = 365

Analyzing these responses by income, shown in Figure 17, 44% of low- and 37% of middle-income parents marked expense, compared to just 12% of high-income parents. We see the opposite trend among parents who selected lack of time, with 41% of high, 37% of middle, and 25% of low-income parents doing so. Although more high- than low-income parents selected time as the primary barrier in our survey, low-income parents are typically more constrained in negotiating time to spend with family. For instance, many low-income parents must work more than one job to make ends meet, while parents with higher incomes are better able to afford time-saving services and situations such as housecleaning and living closer to work to make for shorter commutes (Mogilner, Whillans, & Norton, 2018; Roy, Tubbs, & Burton, 2004). The survey asked respondents to select one "main" reason, and perhaps cost stood out as more salient than time to low-income parents.

Implications

+ By articulating parents' bridging practices, we hope to make parents as well as educators and other caregivers more mindful of and intentional in enacting the roles that will place children on paths toward mastery of the skills, activities, and topics they love. Future research should explore whether and how adults' early bridging practices relate to children's drive and ability to connect their learning across contexts as they grow older.

+ U.S. parents are playing connection, exploration, and curation roles on a weekly basis at about equal rates across various demographic markers. We did, however, detect differences between parents of different income groups on the extension roles, the practices that involve extending children's interests into the community. We might attribute these disparities to the rates at which low-income parents can afford to enroll their children in out-of-school enrichment activities (Duncan & Murnane, 2011), a topic to be addressed in further depth in the section *Brokering Out-of-School Opportunities* below.

+ More than a third of parents who indicated that they never or rarely take their children to local recreational or cultural institutions cited expense as the primary barrier to their doing so. Fortunately, an increasing number of zoos, museums, and state and national parks are offering free or reduced-cost admission days to make their facilities available to a wider spectrum of families. Lack of time was also cited as a significant obstacle to taking children to local institutions and is perhaps the more challenging problem to solve, given its root in persistent workforce challenges.

Teacher roles in cultivating children's interests
In our survey of 600 pre-K–8 teachers, we asked respondents how they support student interests with a set of connection,

exploration, and curation roles similar to those presented in the parent survey; answers are shown in Figure 18. In line with parent responses, connection-oriented bridging behaviors are common among teachers as well. On at least a weekly basis, 80% of teachers talk about the activities their students do outside of school, while 60% learn something from their students that their students learned outside of school. The rates of exploration behaviors, on the other hand, are less consistent between the two samples. Whereas for parents, doing their child's favorite activities with them ranks second-highest, this role ranks as one of the lowest among teachers. Teachers also read less to children about their interests than parents do (51% vs. 78%). Teachers' curation behaviors invert those of parents. While almost half of teachers (46%) help their students find books and other print materials of interest, less than a quarter (23%) report helping students find digital materials on a weekly basis.

Just as we observed with parents, the extent to which teachers play these roles varies by the age of their students. Preschool/pre-K teachers regularly do more of the activities related to their students' interests than primary, elementary, and middle school teachers. Preschool teachers are also more than twice as likely as teachers of grades 6–8 to read books with students about topics of their students' choosing (71% vs. 33%). Interestingly, more teachers of grades 3–5 regularly talk about out-of-school activities with their students than middle school teachers do (83% vs. 76%). And while greater proportions of K–2 and 3–5 (46% and 53%) teachers regularly help students find print materials related to their interests compared to 6–8 teachers (35%), about 22% of teachers across all grade levels help their students find media resources.

Figure 18

Teacher roles in cultivating children's interests by grade

Preschool/Pre-K   Primary   Elementary   Middle

Connection

80%   **talk** about the activities students do in places away from school
78%
78%
83%
76%

60%   **learn** something new from students that they learned outside of school
61%
52%
66%
60%

Exploration

35%   **do** any of students' favorite activities with them
55%
38%
35%
29%

51%   **read** books with students about their interests not directly related to what they are learning school
71%
58%
56%
33%

Curation

23%   help students **find** apps, video games, movies, TV programs, or other media
22%
22%
24%
22%

46%   help students **find** books, comic books, magazines or other print materials
47%
46%
53%
35%

N = 600; teachers who enact these roles at least weekly

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Across all roles, teachers in public and private schools support their students fairly equally. Within public schools, more teachers who work in Title 1 schools (57%) read books of interest to their students at least weekly than teachers in non-Title 1 schools (43%); for all other bridging roles, they support their students at similar rates.

Teacher roles in cultivating children's interests by proportion of students who speak a language other than English at home

■ **Less than 10% of students speak a language other than English at home**

■ **More than 50% of students speak a language other than English at home**

Exploration

Do any favorite activities with them — 31% / 46%

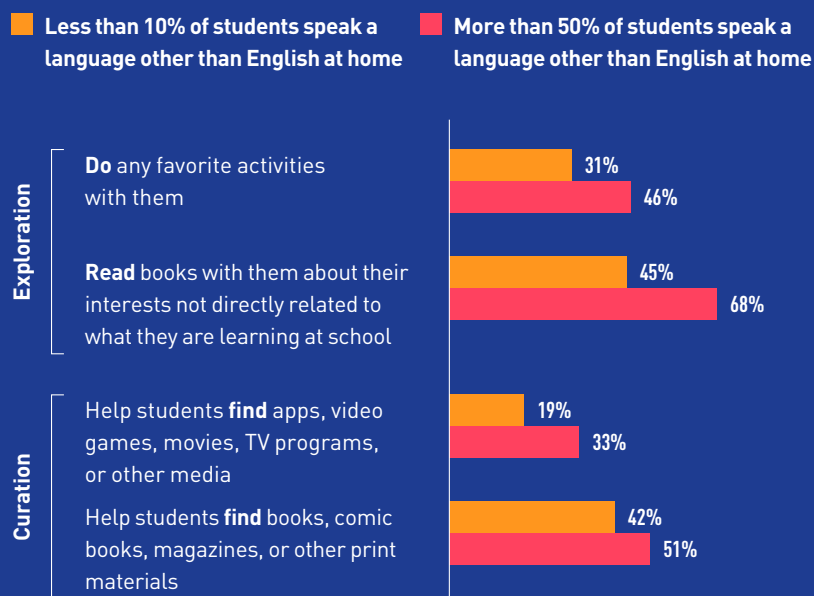**Read** books with them about their interests not directly related to what they are learning at school — 45% / 68%

Curation

Help students **find** apps, video games, movies, TV programs, or other media — 19% / 33%

Help students **find** books, comic books, magazines, or other print materials — 42% / 51%

Note: Teachers who indicated having 11–20% and 21–50% of students who speak a language other than English at home are omitted from this graph.

N = 600; teachers who enact these roles at least weekly

Interesting differences emerge when we analyze responses by students' home language, shown in Figure 19. The survey asked teachers to indicate the percentage of their school's students who speak a language other than English at home, with the following options to choose from: (a) less than 10%, (b) 11–20%, (c) 21–50%, and (d) more than 50%. Sixty-eight percent of teachers who indicated that more than half of their students speak a non-English language at home report reading books of interest to their students at least weekly, compared to just 45% of teacher who selected "less than 10%." Teachers from schools serving higher rates of non-English speaking households also more regularly do students' favorite activities with them and help them find both print and media resources than those serving less linguistically diverse families. These figures suggest that teachers with students for whom English is a second language are playing more active roles in supporting their interests, perhaps as part of the process of scaffolding their language acquisition skills.

Implications

+ Across grades, teachers overwhelmingly reported talking with students about their outside activities. For the student, discussing out-of-school interests and activities with non-family members may reinforce the value and validity of those interests. For the teacher, these conversations provide insights to students' out-of-school lives and surface opportunities to better support their learning, such as by customizing classroom lessons to be more personally relevant or recommending extracurricular resources or activities to their parents. These issues are discussed in more detail in the section *Awareness of Enrichment Opportunities*.

+ Teachers who serve language-diverse communities are more likely to read with, do activities of interest with, and

Figure 20

Parents who find it difficult reaching teachers/school staff

N = 230
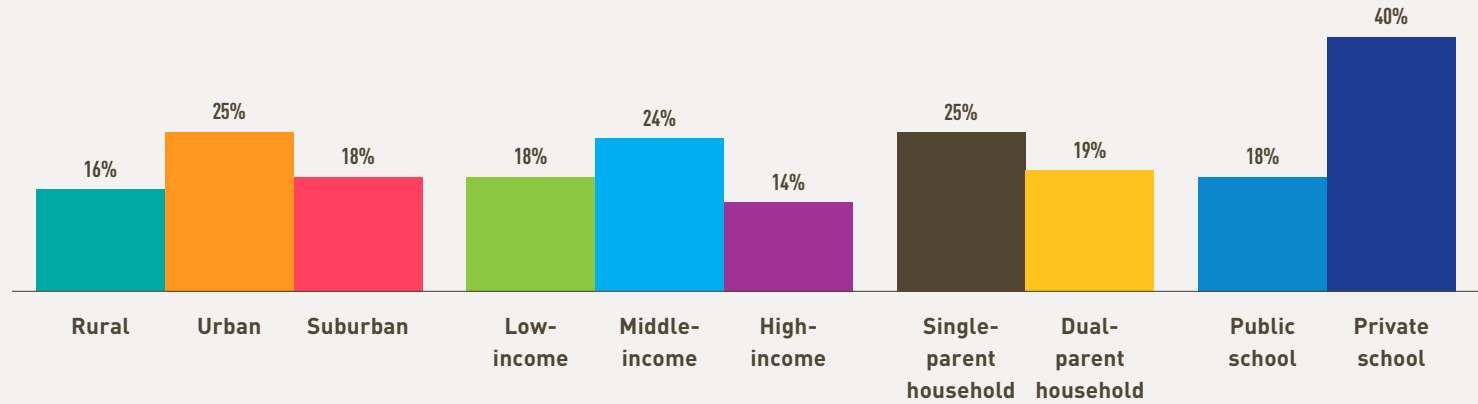
Rural	Urban	Suburban	Low-income	Middle-income	High-income	Single-parent household	Dual-parent household	Public school	Private school
16%	25%	18%	18%	24%	14%	25%	19%	18%	40%

assist students in finding print and digital media sources that reflect their interests, compared to teachers serving less diverse communities. This finding was unanticipated, and the data do not provide further insight into reasons behind these trends. It may be that teachers serving larger proportions of second language learners tend to have more in-classroom support, allowing them to pay more attention to students' individual interests. Alternatively, second language learners may request and/or require more help from their teachers with reading or finding media resources. Future research should determine whether this is a robust finding, and what lessons we may learn from the bridging practices of language-diverse classrooms.

Connecting home and school

Seamless learning across settings depends on how well the adults in children's lives are coordinating to make this happen. We therefore asked respondents of both the parent and teacher surveys a set of related questions about how and how well they are communicating with one another.

Four out of five parents are able to reach their child's teachers with questions or concerns with relative ease. Of the fifth of parents that did express difficulty (see Figure 20), significantly more urban, middle-income, and single parents did so than their counterparts. Further, parents who send their children to private school were far more likely to agree with the statement than parents of public-school students, at 40% vs. 18%, perhaps bolstering a stereotype of the overly demanding private school parent (Ward, 2014).

19% **of all parents agree with the statement:**

"I find it difficult reaching my child's teachers and/or school staff with my questions or concerns."

"How would you describe the degree of communication you have with most of the parents of your students?"

32% of teachers want **more**

64% of teachers say it's **just right**

4% of teachers want **less**

Like parents, teachers are generally satisfied communicating with parents. But their responses to this question varied by student makeup of the school. For instance, 37% of teachers working in rural districts indicated wanting more communication, compared to 27% of suburban teachers. Teachers in public schools also expressed a desire to communicate more with parents than those in private schools. Even starker are the differences between teachers who serve low- versus high-income families (55% vs. 13%), and those in communities where more than 50% of students speak a language other than English at home versus those in which less than 10% of students do (51% vs. 25%).

What is prohibiting communication between teachers and the parents of their students? We asked the teachers who expressed wanting more communication (N = 190) to select from a list of 10 possible reasons, shown in Figure 21, why they don't connect with parents. Teachers primarily attributed the problem to parents failing to show up for in-person meetings or school events. Technology barriers also surfaced as a common explanation.

We asked parents to indicate which methods their child's teacher uses most often to communicate with them, as well as which methods they most prefer. Whereas teachers and parents are generally aligned on the use of e-mail (52% and 54%, respectively) and phone calls (both 30%), parents are less keen on having

Figure 21

Which of the following reasons, if any, prevent you from communicating with the parents of your students more often?

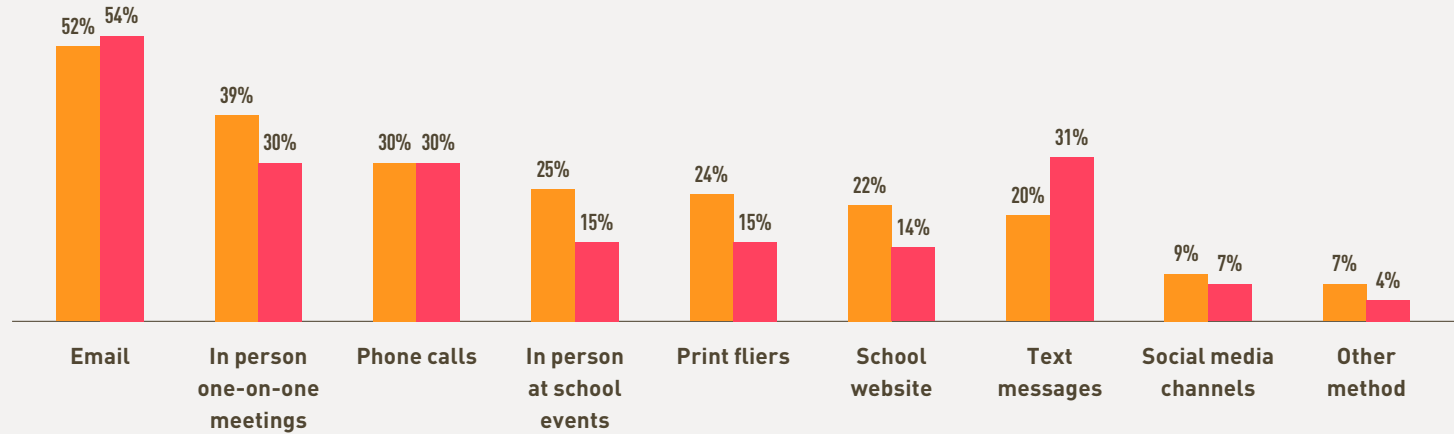| Reason	%
Parents do not attend events on campus	44%
Parents do not show up to scheduled meetings	42%
Technology barriers	36%
Parents are not interested in communicating or I do not feel welcome when I reach out to them	35%
Language barriers	26%
I do not have enough time	26%
I do not have parents' contact information	15%
Distance/transportation barriers	12%
I am not allowed to give parents my phone number	5%
Other	3%

N = 190; select up to 3

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Figure 22

Communication methods
parents reported
teachers using versus
what parents prefer

■ **Method teachers/schools
use most often**

■ **Method parents prefer most**

N = 1,301; select up to 3

	Email	In person one-on-one meetings	Phone calls	In person at school events	Print fliers	School website	Text messages	Social media channels	Other method
Teachers use	52%	39%	30%	25%	24%	22%	20%	9%	7%
Parents prefer	54%	30%	30%	15%	15%	14%	31%	7%	4%

in-person interactions with their child's teacher (one-on-one and at school events) than their child's teacher requests. This is not surprising, given teachers' explanations for inadequate correspondence with parents featured above. But Figure 22 also reveals that 31% of parents prefer texting to communicate with their child's teacher—about on par with the popularity of phone calls and one-on-one meetings among parents (both 30%)—even though just 20% report that their child's teacher texts them.

Implications

+ These findings pose questions and opportunities: Why aren't parents attending school events or parent-teacher conferences? Do their work schedules make it difficult? What more do we need to know to be able to conceive of solutions that would eliminate parental no-shows as a reason for limited teacher-parent communication?

+ A sizable proportion of parents prefer texting to communicate with their child's teacher, which may be a more convenient option for some parents. But how can one teacher realistically manage texting sessions with 30 parents? A genre of mobile apps that facilitates the flow of near-real-time information between home and school has emerged as a promising solution. Bloomz, ClassDojo, Remind, and other classroom communication apps allow teachers to communicate with parents about in-class activities, school events, homework assignments, and individual student progress. Parents, in turn, can message their child's teacher with questions or concerns. These apps are typically free for parents and teachers[7] and are quickly gaining in popularity.

+ Classroom communication apps may be an efficient way to connect home and school, but they are not designed to replace the important in-person conversations that parents and teachers must occasionally have. How might we also bring a technological component to parent-teacher conferences to make them more appealing and convenient for parents?

[7] School administrators may pay a fee for more enhanced plans.

Brokering out-of-school opportunities

Compared to previous generations, today's parents are well aware of the value of out-of-school activities in improving life outcomes for their children (Miller, 2018). Whereas enrolling children in afterschool violin or tennis lessons was once common only among highly educated or upper-middle income parents, American parents of all races, income groups, and education levels are increasingly cognizant of the benefits of out-of-school learning (Ishizuka, 2018). Despite this awareness, our data still document notable divides in terms of actual participation in these activities, shown in Figure 23.

27% of low-income parents reported that their child hadn't participated in any of the 11 listed enrichment activities in the past year, compared to just **6%** of high-income parents

... as well as **25%** of Hispanic versus **17%** of White parents

...and **23%** of rural versus **16%** of suburban parents

Figure 23

Which of the following organized extracurricular or non-school activities has your child attended or participated in during the past 12 months?

	Low-income	Middle-income	High-income
Sports team or lesson (like basketball, martial arts, gymnastics)	33%[a]	44%[b]	63%[c]
Religious class (like Sunday school or Hebrew school)	26%[a]	30%[a]	39%[b]
Art class or lesson (like painting, drawing, crafts)	21%[a]	27%[b]	20%[a]
Performing arts class or lesson (like music, dance)	15%[a]	23%[b]	30%[c]
Overnight or day camp	14%[a]	19%[b]	27%[c]
Childcare program/afterschool childcare program	14%[a]	15%[a]	21%[b]
Game club or activity (like chess club, video game club)	11%	12%	12%
Technology club or class (like computer, robotics, makerspaces)	9%[a]	10%[a]	14%[b]
Language class or school	7%[a]	12%[b]	8%[a]
Science or math club or class (like Science Olympiad, Academic Decathlon)	7%[a]	10%[b]	13%[b]
Tutoring (after school or at companies like Kumon, Sylvan Learning)	6%[a]	9%[b]	10%[b]
None. My child did not participate in an extracurricular/non-school activity	27%[a]	16%[b]	6%[c]

Statistically significant differences at p < .05 level are indicated by differing letters in superscript.

N = 1,550; select all that apply

Our data mirror what scholars like Duncan and Murnane (2011) have identified as the *enrichment gap*—previewed in the first set of findings covered by this report (see Figure 15)—where the top 25% of income earners spend nearly seven times more on enrichment programs for their kids than the bottom 25%. High-income children, for instance, are almost twice as likely to have participated in sports, camp, or an academic club than low-income children. Others have documented similar disparities over the years, and even demonstrated how children with opportunities to participate in organized sports have greater social mobility and later career prospects than their peers who do not (Mahoney, Harris, & Eccles, 2006; Snellman, Silva, Frederick, & Putnam, 2015).

While high- and middle-income parents have, over the past few decades, increased the proportion of their earnings on private school and afterschool activities (Kornrich & Furstenberg, 2013; Schneider, Hastings, & LaBriola, 2018), money isn't the only reason why low-income children are missing out. There are other forces at work here too, including social and cultural factors that our data may shed some light on. While free or low-cost enrichment programs are increasingly available even in impoverished communities (National Education Association, 2008), one possible hypothesis as to why families don't take advantage of them may be due to a *discovery* problem: parents may not be aware that these programs exist, or they may have difficulty locating ones that suit their child's interests or needs and/or their family's budget, schedule, and transportation resources.

What does the enrichment program discovery process look like? To find and choose out-of-school activities for their children, parents first count on the people they know in real life,

Where do you regularly get help or advice finding and selecting extracurricular or non-school activities for your child?

People

Relatives or close friends — 44%
Parents of my child's friends or acquaintances — 42%
My child's teacher(s) or school staff — 41%

Tech/media

Google or other search engines — 32%
Social media — 32%
Local news/events website — 16%
Parenting website or blog — 15%
Newspaper, magazine, or other print materials — 14%
Email lists or listservs — 9%

Places

Libraries — 24%
Community centers like the YMCA or Parks and Recreation — 23%
My child's afterschool center or daycare provider — 11%

Other — 1%
None, I don't get help or advice about extracurricular/ non-school activities — 8%

N = 1,254; parents whose children participated in an extracurricular activity in the past year; select all that apply
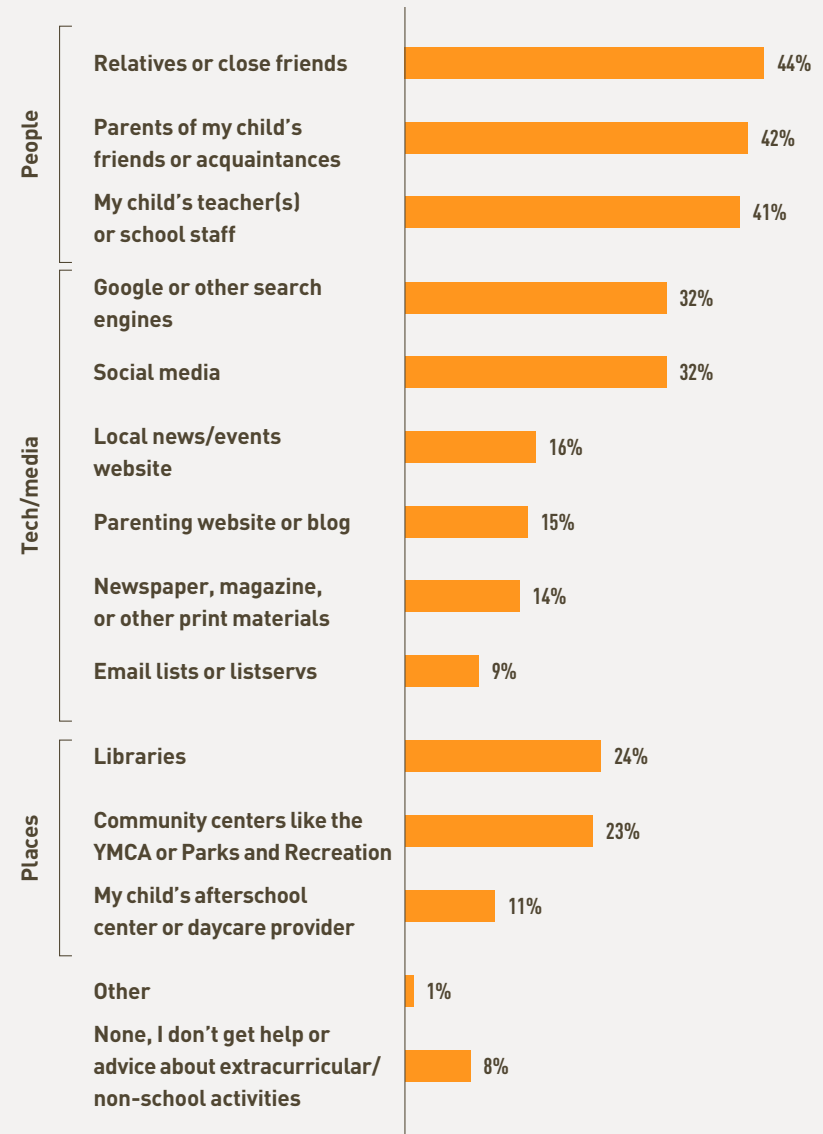
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Figure 25

People and tech/media resources : differences between groups

	Rural	Urban	Suburban	Low-income	Middle-income	High-income	White	African American	Hispanic
Relatives or close friends	47%[a]	39%[b]	47%[a]	48%[a]	43%[a,b]	41%[b]	46%	46%	41%
Parents of my child's friends or acquaintances	42%[a]	32%[b]	48%[a]	35%[a]	43%[b]	53%[c]	46%[a]	34%[b]	34%[b]
Google or other search engines	24%[a]	31%[b]	38%[c]	32%	33%	32%	30%[a]	31%[a,b]	38%[b]
Social media	30%	31%	34%	31%	33%	33%	34%[a]	25%[b]	33%[a]

Statistically significant differences at p < .05 level are indicated by differing letters in superscript.

as illustrated in Figure 24. They also consult media-based resources like search engines and social media and, to a lesser extent, websites, newspapers, and e-mail listservs. Physical locations like libraries and community centers are less common sources of information and advice.

The differences we surfaced between demographic groups, shown in Figure 25, are few but support earlier research on class disparities in social capital (e.g., Bianchi & Vohs, 2016; Granovetter, 1983; Horvat, Weininger, & Lareau, 2003). High-income parents, for instance, are more inclined to seek advice from "weaker ties," namely, parents of their child's friends, than mid- and low-income parents (53% vs. 43% and 35%), and they do so more often than consulting "strong ties," or their own relatives or close friends (53% vs. 41%). For low-income parents, the reverse is true—they are more likely to consult family and friends than other parents (48% vs. 43% and 41%). We also found that fewer urban parents seek advice from their

close or extended social networks than rural or suburban parents. The equity concern here is that that families with few weak ties do not enjoy the indirect benefits of having broader social networks. In the words of a well-known social network scholar, those with few weak ties are "deprived of information from distant parts of the social system and will be confined to the provincial news and views of their close friends" (Granovetter, 1983, p. 202). The parents of other children may, by this argument, provide access to a greater variety of enrichment opportunities to consider.

Suburban parents and Hispanic parents are more likely than their counterparts to search the Internet for enrichment opportunities for their children. In fact, Hispanic parents are more likely to search the Internet than ask parents of their children's friends for advice (38% vs. 34%), which is the opposite for White parents (30% vs. 46%). We also found that more White parents consult social media than African American

parents for these purposes. Otherwise, across community setting, income group, and race/ethnicity, parents seek advice from their child's teachers about equally, as well as at physical locations like local libraries and community centers.

Implications

+ What can we do to improve the discovery process for families with less robust social networks that can expose them to more, and more varied, information about out-of-school enrichment opportunities? Perhaps we should leverage the influence of teachers, a source that all groups consult about equally for such information, through programs that encourage teachers to more proactively collect, assemble, and share local opportunities with parents.

+ Hispanic parents search the Internet more than they rely on advice from the parents of their children's friends. Are they finding the resources they need online? Do the sources they find offer reliable information? How do parents sift through and evaluate this information? Further research on the media literacy practices of adults—Hispanic and otherwise—could help answer these questions.

+ Teachers, search engines, and libraries are three of the most accessible resources of information for enrichment activities. How can we improve the quality and quantity of information provided by these resources?

Figure 26

Why parents don't consult certain resources to help find or select extracurricular activities

Legend:
- Didn't think about it
- Not relevant
- Not sure I can find information on extracurricular activities there
- Not interested in using this source
- Do not have access or not available

	Relatives/ friends	Child's teacher	Libraries	Community center	Search engines	Social media
Didn't think about it	31%	39%	41%	35%	39%	27%
Not relevant	26%	23%	16%	16%	19%	18%
Not sure I can find information	20%	14%	18%	11%	18%	18%
Not interested in using this source	15%	16%	18%	22%	20%	31%
Do not have access or not available	9%	7%	6%	16%	4%	6%
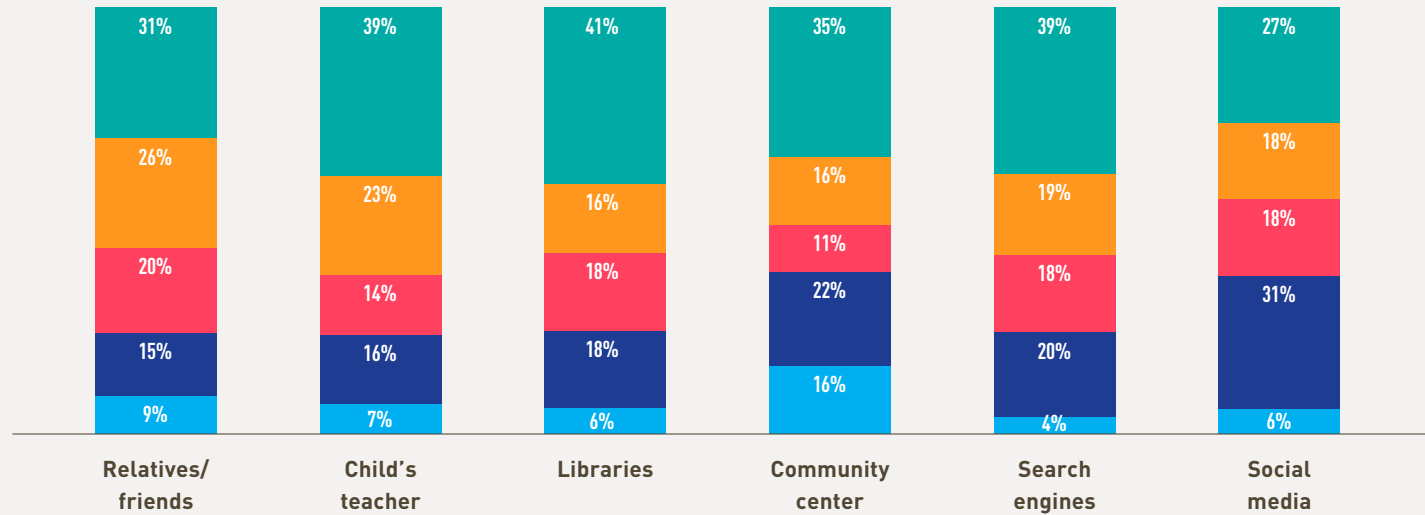
Awareness and perceptions

Awareness is a critical component in the connected learning ecosystem. If the adults in children's lives aren't aware of the power of connected learning, their potential roles in supporting such learning, and the resources available to them to do so, they lose valuable opportunities to further a child's interests. And unless teachers and out-of-school educators know what's going on at home, and parents know what's going on at school and other locales where their children spend time, there is unlikely to be much coordination between these adults to connect children's interests into meaningful experiences. We therefore crafted questions to gauge adult awareness around these issues.

Awareness of enrichment opportunities

As a follow-up to the previous questions on where parents locate information on extracurricular activities, we asked respondents who do not regularly consult certain resources why they don't. These responses are shown in Figure 26. In most cases, they indicated that they just don't think about it. For instance, of the parents who don't consult libraries or librarians, 41% said it hadn't occurred to them to do so. Of the parents who don't consult their child's teacher, 39% also didn't think to do so, even though 71% of the teachers we surveyed say they provide families with information about extracurricular activities and events in the community.

Access, on the other hand, was the least selected reason why parents overlook most of the listed resources. Just 6% of parents reported not having access to a library. Yet we know that libraries

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are resource-rich when it comes to providing and promoting affordable enrichment activities available in the community (Lopez, Caspe, & McWilliams, 2016). The challenge, therefore, is figuring out how to get families into these physical spaces and interacting with library staff in an era when it's simply more convenient to search the Internet, which may not always yield the most reliable results.

Parents are also fairly pessimistic about the availability of *suitable* enrichment opportunities available in the community. Piano teachers and soccer teams may abound, but are they affordable? Can parents manage the biweekly soccer practices and matches without a car? And of all the dance studios out there, why isn't there even one devoted to hip-hop? Whether parental perceptions, shown in Figure 27, match the true
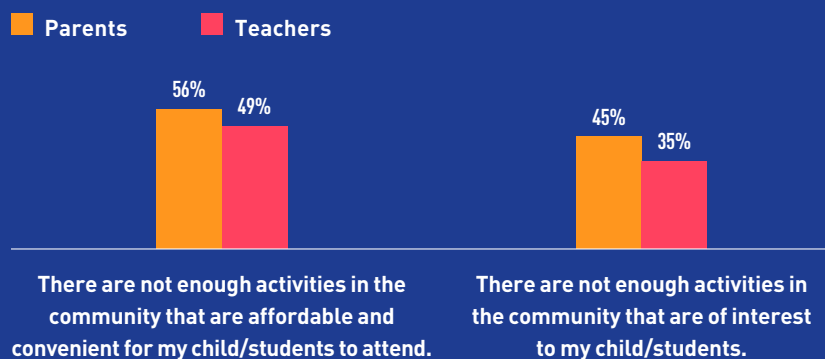
availability of suitable enrichment opportunities is not something we attempted to measure in this study, but these perceptions certainly influence whether and how parents pursue certain activities for their child.

Teachers are slightly more optimistic than parents about the availability of affordable, convenient, and interesting enrichment opportunities for children, and this optimism may stem from having seen the range of activities their students actually participate in. In fact, three-quarters of teachers say that they are aware of the extracurricular activities that most of their students engage in, shown in Figure 28 (see next page). We found no differences between teachers from private versus public schools, or between teachers with large versus small class sizes. However, rural teachers reported higher rates of awareness of their students' extracurricular activities than suburban teachers, at 80% compared to 69%, perhaps reflecting the adage that everyone knows each other's business in a small town.

Figure 27

Parent and teacher perceptions of the availability of enrichment opportunities

(Participants who selected either somewhat agree or strongly agree)

■ Parents   ■ Teachers

56% / **49%**

There are not enough activities in the community that are affordable and convenient for my child/students to attend.

45% / **35%**

There are not enough activities in the community that are of interest to my child/students.

Parent N = 1,550; Teacher N = 600

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Figure 28

Teacher awareness of various aspects of
their students' out-of-school lives

85% are aware of the **academic interests**
of most of their students (38%/47%)

74% are aware of the **extracurricular** activities in which
most of their students are involved **(22%/52%)**

71% are aware of the **hobbies and/or out-of-school
interests** of most of their students (17%/54%)

70% are aware of the **central people** in the lives of
most of their students (25%/46%)

56% are aware of how most of their students spend
their **weekends** (8%/48%)

% **Completely aware**   % **Moderately aware**

N = 600

Implications

+ At a time when it's convenient to search for practically
anything on a cell phone, how can we get parents into
libraries where they may learn about a wider variety of local,
low-cost opportunities available to their kids, including
those hosted by libraries themselves? Getting more families
into their local libraries in the first place is a challenge that
everyone from local librarians to university researchers to
government funding agencies are tackling at full force. But
perhaps there is a role that children's media producers,
technology developers, and even Internet search tool designers

can play in encouraging family visits to the library. Short of
that, can we design new tools that improve the enrichment
activity discovery process, especially for parents less aware
of the opportunities out there?

+ Taken together, these data suggest that the adults in a child's
learning ecosystem could communicate more with one
another about the range of enrichment opportunities available
in a given community. Perhaps if they did so more regularly
and intentionally, lack of awareness wouldn't pose as much
of a barrier to children's connected learning as more tenacious
factors, like poverty, divorce, or language barriers. How can
we facilitate conversations among parents, teachers,
librarians, and others in a way that accommodate busy
work schedules and cultural differences? And how might
these conversations extend all families' social networks
such that local knowledge is more equitably distributed?

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Perceptions of learning, in and out of school

To gauge certain values and beliefs around children's learning, participants of both the parent and teacher surveys were presented with a set of statements and asked to indicate the extent to which they agree with each, shown in Figure 29. While almost all parents and teachers believe that kids need some unstructured time during the day, a full two-thirds of parents somewhat contradictorily think that children should be involved in as many organized activities as their schedules can handle, compared to just under half of teachers. More parents and teachers disagree than agree with the statement that what kids learn in school is more important to their future success than what they learn through extracurricular pursuits, evidence that a sizable proportion of adults do in fact view out-of-school time as valuable to children's learning. An even greater proportion of parents (63%) believes that teaching is *not* the sole responsibility of teachers, further reinforcing these sentiments. Teachers are inclined to give more credit to school time and instruction than parents.
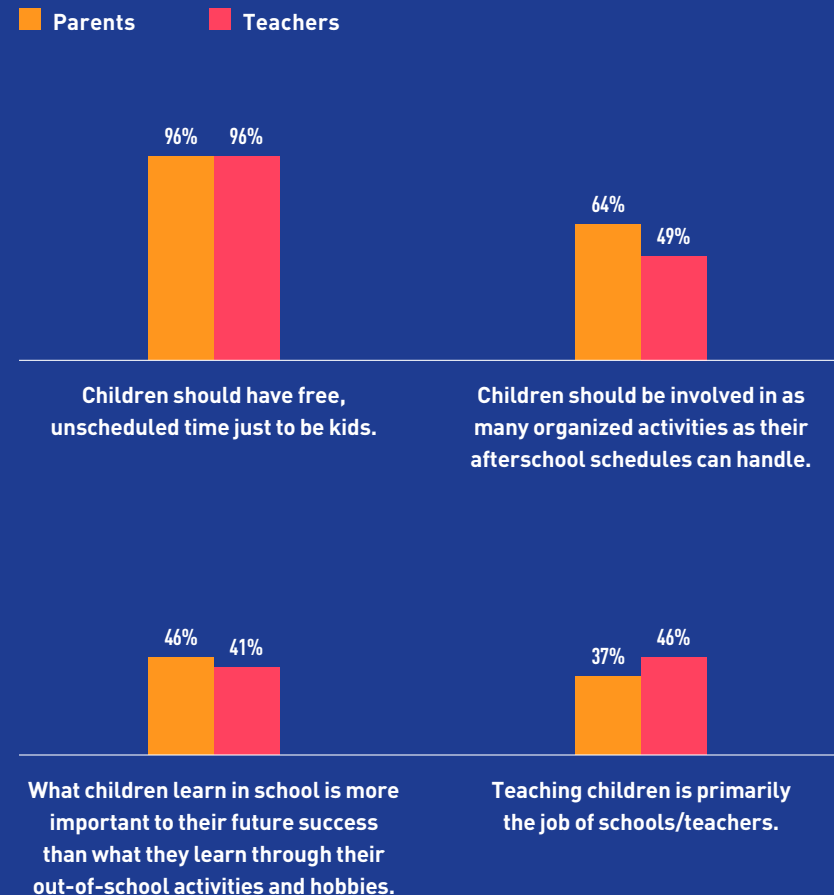
While we found no differences in how parents of different income groups responded to these statements, African American and Hispanic parents are more likely than White parents to believe that what kids learn in school is more important to their future success than what they learn through extracurricular pursuits, at 51% and 53% vs. 43%. This reflects past research on the value that African American and Hispanic parents place on the formal education system to improve their children's future prospects (e.g., Stevenson, Chen, & Uttal, 1990; Valdés, 1996). African American parents are also more likely than White and Hispanic parents to agree with the statement, "I try to get my child involved in as many organized out-of-school activities as his/her schedule can handle," at 80% vs. 60% and 64%.

Figure 29

What parents and teachers think about learning

(Participants who selected either Somewhat Agree or Strongly Agree)

■ **Parents**   ■ **Teachers**

96% 96%
Children should have free, unscheduled time just to be kids.

64% 49%
Children should be involved in as many organized activities as their afterschool schedules can handle.

46% 41%
What children learn in school is more important to their future success than what they learn through their out-of-school activities and hobbies.

37% 46%
Teaching children is primarily the job of schools/teachers.

Statistically significant differences at p < .05 level are indicated by differing letters in superscript.

N = 1,550; select all that apply

Implications

+ These data suggest that U.S. parents as a whole recognize the value of non-school contexts and actors in their children's learning. This means that, at least in theory, they would be supportive of a connected learning ecosystem and additional efforts they could take to facilitate learning across boundaries.

+ However, research by our partners at the <u>FrameWorks Institute</u> (Levay, Volmert, & Kendall-Taylor, 2018) presents a more nuanced portrait of people's perceptions of the nature of learning—and STEM learning in particular—across various settings. According to their interviews with members of the general public (not exclusively parents or teachers), Americans focus on school and home as primary locales of learning to the exclusion of places like libraries, museums, afterschool programs, and summer camps. The public also thinks integrating learning across settings is simply about reinforcing school-based content and fails to appreciate the learning that takes place in non-school settings in and of itself. These and other assumptions make it difficult for people to accept and enact certain bridging solutions.

+ Fortunately, awareness of what these assumptions are can help us figure out what we need to do to change them. As part of the FamLAB project, FrameWorks has identified key messaging gaps and is framing them in ways that build public will and creates a context in which cross-setting learning is possible. Visit the <u>Joan Ganz Cooney Center website</u> for more information about this work.

Feelings of connectedness to the school community

The extent to which both parents and teachers feel connected to their school communities may shape the nature and flow of learning across home and school (Mapp, 2003; Suárez-Orozco, Pimentel, & Martin, 2009). Through a pair of related questions, we asked parents and teachers whether they feel they can relate to the families who comprise the school community.

40% of parents of 3–12-year-olds agree with the statement:

"Our family is different from most of the families whose children attend my child's school."

21% of pre-K–8 teachers agree with the statement:

"I find it difficult to relate to many of my students' families."

Quite a few differences emerged along demographic lines in both parent and teacher samples. Urban parents and teachers (46% and 26%) were more likely to agree with these statements than those in rural and suburban communities (41% and 21%). Parents and teachers in lower-income communities (41% and 36%) were also more likely to agree with these statements than those in higher-income communities (31% and 19%). Furthermore, Title 1-school teachers agreed with the statement at higher rates than non-Title 1-teachers (25% vs. 14%). Lastly, Hispanic and African American parents (44% and 44%) admitted to feelings of dissimilarity at higher rates than White parents (37%).

Implications

+ That 40% of parents feel as though their family is different from others in the school community is strikingly high. And if parents feel like outsiders, they are less likely to connect with other parents and, in doing so, cultivate those weak ties that can expose them to a wider variety of enrichment opportunities available in the community. Fortunately, parent engagement, parent liaison, and family "welcoming" programs that help parents feel less alienated and more empowered in their child's education (Abrams & Gibbs, 2002; Lawson, 2003; Sanders, 2008; Warren, Hong, Rubin, & Uy, 2009) are growing in number. The National Association for Family, School, and Community Engagement, the Global Family Research Project, and the Early Learning Lab offer strategies and models that district and school leaders can use to help all parents feel like integral members of the school community.

+ A fifth of U.S. teachers find relating to many of their students' families difficult, which is certain to influence their attitudes toward and practices around culturally responsive pedagogy. Leveraging families' "funds of knowledge"—the expertise based on individual families' culture, work experience, or daily routines (Moll, Amanti, Neff, & Gonzalez, 1992)—has proven an effective approach to building greater empathy between teachers and their students and leads to better learning outcomes as a result (Gonzalez et al., 1995). In-person visits are one way that parents can share their funds of knowledge with teachers but, as our survey indicates, parents have difficulty attending these meetings. As mentioned in the section *Connecting Home and School*, parent engagement apps (e.g., Bloomz, ClassDojo, Remind) offer schools pre-packaged solutions to the parent-teacher communication problem; how might teachers use these tools to tap into families' funds of knowledge? And what kinds of professional development supports are required to help teachers make the most of these tools for cultural knowledge sharing?

Perceptions of children's interests

At the start of the survey, we asked parents to identify just one of their children between the ages of 3 and 12 and to keep this target child in mind when answering all questions. We then asked them to provide two of the child's current interests that they consider *good for [his/her] learning or development*, which could include a "favorite topic, sport, or hobby." This yielded 3,100 write-in responses, which ranged from Minecraft to ballet, hip-hop to sushi. To be able to see patterns across the write-in responses, we coded all entries into 52 groupings of interests. The full taxonomy of interests is displayed in the Appendix, along with a brief description of our coding process.

Of the interests that parents consider "good" for their kids, which emerged as most popular among 3–12-year-olds? Figure 30 ranks the top 10, which account for 62% of all entries received.[8] Team sports have long been associated with positive youth outcomes, as they offer opportunities to set goals; take risks and fail in a safe space; follow direction and lead; and, of course, develop physical skills and fitness (Eime, Young, Harvey, Charity, & Payne, 2013). It comes as little surprise that team sports—with entries including basketball, soccer, and baseball—ranks first.

Digital games are a less-intuitive runner-up, given their reputation as a cause of violence and misogyny in society (e.g., Anderson et al., 2008; Carnagey, Anderson, & Bushman, 2007; Gentile & Anderson, 2003). But perhaps because today's parents grew up playing digital games (and for the most part turned out just fine) and because there are more "educational" titles on the market than ever before, attitudes have shifted toward the positive. Some of the most common entries to fall within this coding category included specific titles like Minecraft and Pokémon, both of which have been touted by educators and researchers as beneficial to kids' cognitive, social, and physical development (e.g., Althoff, White, & Horvitz, 2016; Bos, Wilder, Cook, & O'Donnell, 2014; Short, 2012; Tateno, Skokauskas, Kato, Teo, & Guerrero, 2016).

Figure 30

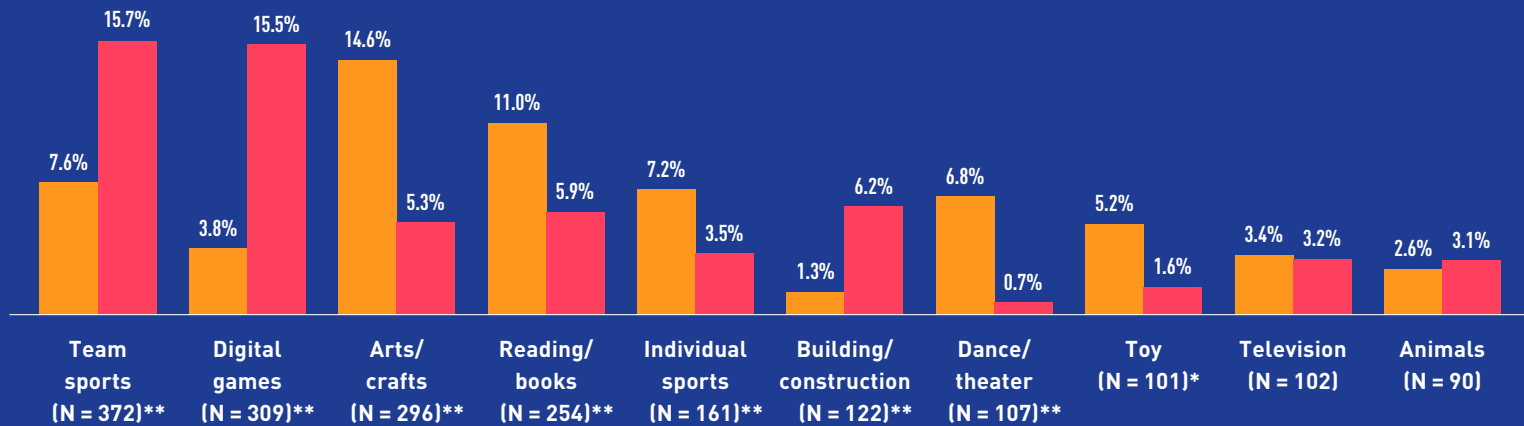Kids' top interests that parents also consider good for their child's learning/development

12.0%	**Team sports**	Soccer, basketball, cheerleading, bowling, kickball, lacrosse, tee-ball
10.0%	**Digital games**	Video games, gaming, PlayStation, Minecraft, Mario, Xbox
9.5%	**Arts/ crafts**	Art, drawing, painting, coloring books, crochet, ceramics, DIY
8.2%	**Reading/ books**	Harry Potter books, learning to read, reading, books
5.2%	**Individual sports**	Swimming, karate, horseback riding, ice skating, tennis
3.9%	**Building/ construction**	LEGO, blocks, models, tent making, Play-Doh, building
3.5%	**Dance/ theater**	Dance, ballet, theater, hip-hop class, Irish dance, drama
3.3%	**Television**	Cartoons, *Paw Patrol*, *Peppa Pig*, *Doc McStuffins*, television
3.3%	**Toy**	Hot Wheels, American Girl, action figures, yo-yo, fidget spinner
2.9%	**Animals**	Spiders, dinosaurs, dogs, pets, pony, marine life

N = 3,100; two entries per parent

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Figure 31

Top 10 interests
by child gender

■ Girls (orange)
■ Boys (pink)

*Significant differences at the p < .01 level
**Significant differences at the p < .001 level

N = 3,100; two entries per parent

Interest	Girls	Boys
Team sports (N = 372)**	7.6%	15.7%
Digital games (N = 309)**	3.8%	15.5%
Arts/crafts (N = 296)**	14.6%	5.3%
Reading/books (N = 254)**	11.0%	5.9%
Individual sports (N = 161)**	7.2%	3.5%
Building/construction (N = 122)**	1.3%	6.2%
Dance/theater (N = 107)**	6.8%	0.7%
Toy (N = 101)*	5.2%	1.6%
Television (N = 102)	3.4%	3.2%
Animals (N = 90)	2.6%	3.1%

Statistically significant differences surfaced between boys and girls on eight of the top 10 categories, shown in Figure 31, reifying certain age-old stereotypes of children's play. For instance, twice as many team sports entries came from parents of boys than girls, as did five times as many on digital games and six times as many on building/construction. Three times as many entries for arts/crafts came from parents of girls, who also listed reading/books nearly twice as often. Television and animals are the only two entries in the top 10 that parents of boys and girls listed about evenly, at 3%.

Three interests in the top 10 differed significantly by family income: team sports, individual sports, and television. High-income parents listed team sports much more frequently than both middle- and low-income parents, at 18% vs. 6% and 4%. Middle- and high-income parents also listed some type of individual sport more often than low-income parents, at 6% and 7% vs. 4%. These differences mirror those surfaced in our analyses around enrollment in extracurricular activities

(Figure 23). Finally, parents in the low-income bracket wrote in television-based activities (such as "television," "TV," as well as specific show titles like *Paw Patrol* and *Peppa Pig*) at slightly higher rates than parents in the high-income bracket, at 4% vs. 2%. These differences align with Rideout's (2014) parent survey of educational media, which found higher rates of educational TV/DVD viewing among low- than high-income 2–10-year-olds.
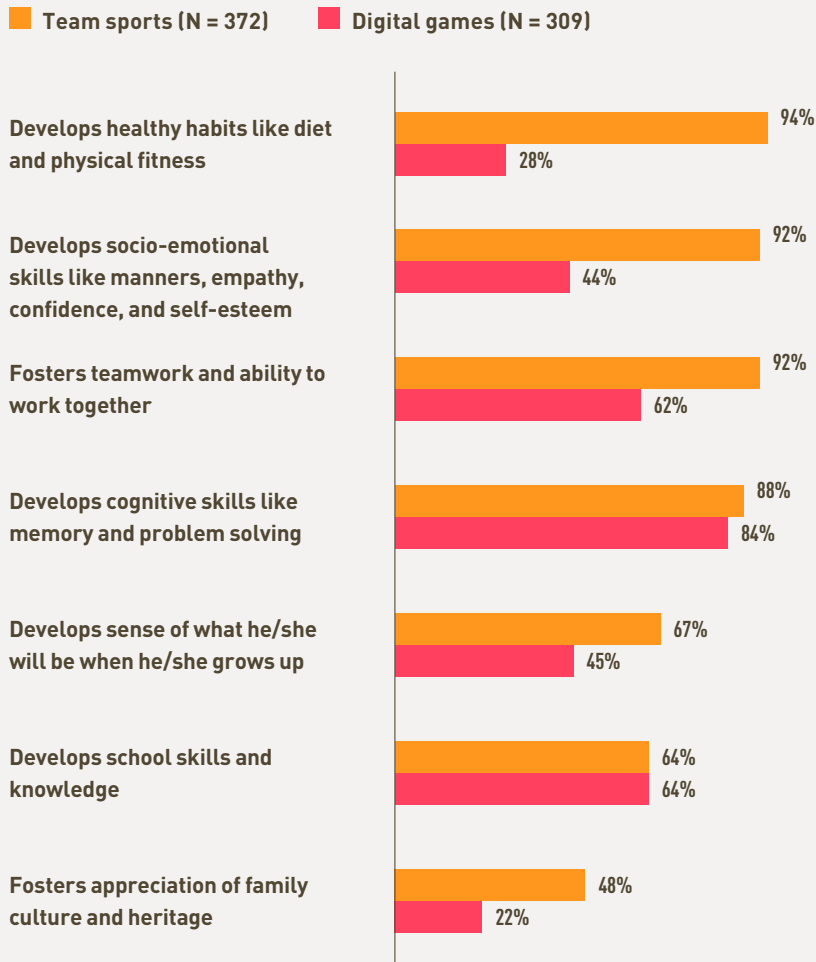
In asking parents to name two interests they believe to be good for their child's learning or development, we were able to get a sense of the types of activities that parents find worthwhile. But to better understand how they perceive of specific interests, we asked parents to identify which competencies they associate with the interests they named. For instance, for a parent who wrote in Minecraft as the first of her son's two current interests,[9] we customized the survey question to ask:

[9] In the survey, respondents were given two separate fields into which to type their child's two interests. In the present question, parents were reminded of the interest they typed into the first field. This means that the number of parents who answered this question was limited to those who entered either a team sport or digital game-related interest into the first field, and excluded those who may have entered one of these interests into the second but not first field.

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Figure 32

The skills and competencies parents think team sports and digital games foster in their child

(Strongly Agree and Somewhat Agree)

🟧 **Team sports (N = 372)**　🟥 **Digital games (N = 309)**

Category	Team sports	Digital games
Develops healthy habits like diet and physical fitness	94%	28%
Develops socio-emotional skills like manners, empathy, confidence, and self-esteem	92%	44%
Fosters teamwork and ability to work together	92%	62%
Develops cognitive skills like memory and problem solving	88%	84%
Develops sense of what he/she will be when he/she grows up	67%	45%
Develops school skills and knowledge	64%	64%
Fosters appreciation of family culture and heritage	48%	22%

Think about your son's interest in Minecraft. How much do you agree or disagree with the following statements? My child's interest in Minecraft…

+ Develops skills and knowledge related to what he is *learning at school*.
+ Develops *cognitive skills* such as attention, memory, or problem solving.
+ Develops a sense of what he *wants to do when he grows up*.
+ Fosters *teamwork* and the ability to work with others.
+ Develops knowledge or an appreciation of our *family's culture or heritage*.
+ Develops *socio-emotional skills* like manners, empathy, confidence, and self-esteem.
+ Develops *healthy habits* like exercise and nutrition.

We analyzed responses, shown in Figure 32, by our higher-level interest groupings and share findings for just the first- and second-ranked interests, team sports (N = 372) and digital games (N = 309). Of the parents who entered a team sport as one of their child's top interests, a strong majority agreed (either strongly or somewhat) with statements associating team sports with healthy habits (94%), socio-emotional skills (92%), teamwork (92%), and cognitive skills (88%). About a third of these parents also agreed that team sports develop school skills and knowledge (67%) and a sense of what their child will be when he or she grows up (64%). Digital games fared worse by comparison on healthy habits (28%), socio-emotional skills (44%), and appreciation of family culture or heritage (22%). This perhaps reflects popular cultural models about the harmful nature of video games—i.e., that video games cause obesity, that games depict minorities in negative ways, and the myth of the solitary gamer (see Kutner & Olson, 2008).

Nevertheless, parents regard team sports and digital games about equally when it comes to cognitive skills (88% and 84%) and school skills and knowledge (both 64%). Keeping in mind that we only asked parents who believe team sports or digital games are good for their child to assess their value, it is encouraging that a majority of them acknowledge connections to competencies required to succeed in school and beyond, connections that have been backed by empirical research (Bailey et al., 2006; Granic, Lobel, & Engels, 2014; Griffiths, 2002).

Implications

+ How do parents develop their notions of the benefits and threats of digital games? Direct observation, what they read or hear in the news, or through their own experiences as digital gamers? And how do these beliefs shape how they mediate children's digital game play? While there is strong evidence to suggest that certain types of digital games can have salutary effects on players—including school performance and socio-emotional learning (Bavelier & Takeuchi, 2016; Clark, Tanner-Smith, & Killingsworth, 2014; Granic, Lobel, & Engels, 2014)—are parents guiding children toward these types of games? Further research may help answer these questions.

+ There is more work to be done to understand what parents of diverse backgrounds consider "good" for their child's learning and development. Low-income parents reported higher rates of TV viewing than others, which could be explained by some special role that television plays in the household in terms of family learning or connection (Takeuchi, 2011). More qualitative methods could help fill in these explanations and inform how we guide parents of various backgrounds on bridging their children's interests.

+ Prior research shows that from an early age, children are attracted to gender-typed toys and other leisure time activities that mirror their own gender (e.g., Cherney & London, 2006; Weinraub et al. 1984), even when their parents say they reject common stereotypes (Freeman, 2007). Given the bodies of research associating youth participation in sports with academic outcomes and digital game play with cognitive, social, and health outcomes, there is concern that gender-typed interests may place girls at a disadvantage when it comes to, for instance, STEM (Subrahmanyam & Greenfield, 1994; Terlecki & Newcombe, 2005) and workplace leadership pathways. How can we help parents, educators, coaches, digital game designers, and the media industry (film, television, news) be more mindful of the ways in which they may be unwittingly perpetuating these stereotypes? How can we raise public awareness around the consequences for doing so?

conclusion

Maria Montessori, Italian physician and educator who developed the Montessori Method of education, once said that "the goal of early childhood education should be to activate the child's own natural desire to learn." Nearly 100 years later, the idea that children learn best when they are intrinsically interested in the subject matter or activity at hand has gained even more traction. Educational television programs, video games, and mobile apps seek to draw children in and entertain them in order to teach literacy, math, science, and other skills. Parents search for toys and books that leverage children's interests. Teachers fine-tune student-centered pedagogy, increasingly approaching their role more as a guide than an instructor. For a particularly lucky subset of children, the varied actors and spheres of their lives align, and their unique interests are encouraged and facilitated across time, place, and social context.

This report adds to our growing understanding of how children learn across the many boundaries of their lives. Adding to the work of other scholars in the connected learning space, we have charted primary people, places, and contexts that can bridge children's learning, and started to probe the connections between them.

Our findings suggest untapped opportunities for many U.S. children. As others have found before us, we see enrichment gaps in children's access to extracurricular activities like performing arts classes and technology clubs, high-quality spaces for learning such as museums and sports facilities, and technology tools that enable rich modes of participation and creative expression. These gaps appear to be disproportionately experienced by children in lower-income and racial/ethnic minority families.

And yet, the power of connected learning lies in its strength-based approach. More than the deficits, these findings highlight the opportunities to connect the existing architecture of children's lives. Common among children from diverse demographic backgrounds are a variety of supportive adults who are invested and engaged in children's learning. Overwhelmingly, children have access to digital devices, which they use to find information, watch tutorials, play games, and more. Perhaps most importantly, children have multi-faceted interests that are recognized and acknowledged as valuable by parents and teachers alike.

Our charge now is to help leverage and connect these resources so that children's engagement and learning in one setting can be supported and extended in the next. High-quality information provided by trusted sources to parents, family members, teachers, and other figures can guide caregivers to low- or no-cost spaces and activities that are convenient and fit families' needs, encourage caregivers to co-engage with children around media use, hobbies, and unstructured free time, and facilitate communication among the various supporting figures in children's lives.

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appendix

Interest coding methods

We examined the 3,100 entries to create natural groupings of the interests and came up with 53 categories, shown in Figure 33. For instance, interests like basketball, football, and soccer were categorized as team sports, and interests like bicycling and skateboarding were categorized as transport sports. We then assigned all parent entries into one of these categories. While many of the interests parents wrote in could fall under multiple categories, we assigned each interest to just one. To ensure that such interests were consistently assigned to the same category, we applied a strict set of rules to the sorting process. For instance, we applied all "LEGO" entries to the building/construction category, despite overlaps with the toys and play categories. Through three rounds of coding and discussion, two researchers reached full agreement on these category assignments.

Figure 33: **Taxonomy of children's interests**

Academic

Code	#	Examples of parents' write-in responses	Category
Science-General	01	Antarctica, nature, science, experiments, STEM, plants	STEM
Science-Animals	02	Spiders, dinosaurs, dogs, pets, pony, marine life	STEM
Science-Earth	03	Rocks, volcanoes, weather, ocean, hurricanes, environment	STEM
Science-Space	04	Planets, astronauts, astronomy	STEM
Technology	05	Phone, computer, technology, iPad, tablet, electronics, cell phone, Internet	STEM
Engineering-General	06	Engineering, mechanics	STEM
Engineering- Building/ Construction	07	LEGO, blocks, models, tent making, Play-Doh, building	STEM
Engineering- Programming	08	Coding, Scratch, computer programming, robotics, Roblox	STEM
Math	09	Numbers, algebra	STEM
Language Arts-General	10	Alphabet, ABCs, words, spelling, word games, handwriting	Language Arts
Language Arts-Reading & Books	11	*Harry Potter* books, learning to read, reading, books	Language Arts
Language Arts- Comics & Anime	12	Manga, anime, comic books	Language Arts
Language Arts-Writing	13	Blogs, writing own books, writing comics, writing letters	Language Arts
Language Art- Languages	14	Spanish, ASL	Language Arts
Social Studies	15	History, the Titanic, Greek mythology, World Wars, presidents	Social Studies
Learning	16	School, learning, ABCs, shapes, brain training	Learning
Learning-Digital	17	LeapFrog, ABC Mouse, PBS Kids, Hooked on Phonics, math websites	Learning

Artistic

Code	#	Examples of parents' write-in responses	Category
Arts-Arts & Crafts	18	Art, drawing, painting, coloring books, crochet, ceramics, DIY	Visual
Arts-Photo/Video/Digital	19	Taking pictures, movie/video making, Photoshop, graphic design	Visual
Arts-Music-Instrument	20	Piano, violin, band, orchestra, guitar, instruments, music lessons, orchestra	Music
Arts-Music-Creation	21	DJing, rapping, writing music, Guitar Hero, Music.ly	Music
Arts-Music-Listening	22	Music, iPod, YouTube music	Music
Arts-Voice	23	Singing, chorus	Music
Arts-Dance/Theater	24	Dance, ballet, theater, hip hop class, drama	Dance/Theater
Beauty & Fashion	25	Hair, makeup, fashion, clothes	Beauty

Active

Code	#	Examples of parents' write-in responses	Category
Sports-General	26	Sports, jumping, PE	Sports
Sports- Individual	27	Swimming, karate, horseback riding, ice skating, tennis	Sports
Sports- Spectator	28	WWE, watching football, baseball counting, NFL, Packers	Sports
Sports-Team	29	Soccer, basketball, cheerleading, bowling, kickball, lacrosse, tee-ball	Sports
Sports- Transport	30	Bicycle, skateboarding, dirt bikes, scooter	Sports
Outdoors/Nature	31	Camping, geocaching, being outside, gardening, farming, hunting, hiking	Outdoors/Nature

Media

Code	#	Examples of parents' write-in responses	Category
Games-General	32	Games, playing games, problem-solving games, quiz bowl	Games
Games-Analog	33	Board games, cards, puzzles, chess, Rubik's Cube	Games
Games-Digital	34	Video games, gaming, PlayStation, Minecraft, Mario, Xbox	Games
Video-General	35	Watching her tablet, looking at PBS Kids, videos	Video
Video-Movies	36	*Frozen*, *Descendants*, *Tangled*	Video
Video-Television	37	Cartoons, *Paw Patrol*, *Peppa Pig*, *Doc McStuffins*, television	Video
Video-Online	38	Minecraft videos, YouTube, user-created video channels	Video
Branded Character	39	Elmo, Spider-Man, Marvel superheroes, Star Wars	Branded Character

Play

Code	#	Examples of parents' write-in responses	Category
Play-General	40	Play, playing, water play	Play
Play-Imaginative	41	Dress up, pretend, playing school, playing house	Play
Play-Outdoor	42	Playing outside, playing in dirt, sandbox	Play
Play-Toy	43	Hot Wheels, American Girl, action figures, yo-yo, fidget spinner	Play
Fantasy	44	Dragons, ghosts, Godzilla, zombies, mermaids, fairies, unicorns, clowns	Fantasy

Social

| Code	#	Examples of parents' write-in responses	Category
Clubs-General	45	Clubs, academic club, animal club, sewing club, track club	Clubs
Clubs-help & volunteerism	46	Helping, volunteering, tutoring, 4H, babysitting, Brownies, Cub Scouts	Clubs
Socializing	47	Friends, boys, playing with family/ siblings, party, social media	Socializing

Miscellaneous interest and other

Code	#	Examples of parents' write-in responses	Category
Career	48	Firefighter, film industry, vet, careers, teacher, teaching, military, army	Career
Collecting	49	Trading cards, stamps, collecting bugs, Yu-Gi-Oh! cards	Collecting
Food and cooking	50	Eating, candy, baking, cooking	Food and Cooking
Guns	51	Shooting, guns, Nerf Guns, toy guns	Guns
Vehicles	52	Cars, planes, fire trucks, race cars, snowmobiles	Vehicles
Other	53	Magic tricks, napping, bubble blowing, vacuum, everything, nothing, hobby, church, travel	Other

About the authors

Lori Takeuchi, Deputy Director and Head of Research for the Joan Ganz Cooney Center at Sesame Workshop, conducts research on how children use media across various settings and the implications these tools hold for their learning and development. Since 2008 she has directed several of the Cooney Center's distinguishing initiatives, including Print vs. E-books, The New Coviewing, *Aprendiendo Juntos*, and the Families and Media Project. Prior to joining the Cooney Center, Takeuchi spent a decade designing science simulation and visualization software. She began her career managing the ITV Department at Thirteen/WNET. Takeuchi holds an AB in Communication from Stanford, an EdM in Technology and Innovation in Education (TIE) from Harvard, and a PhD from Stanford in the Learning Sciences.

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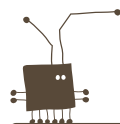
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