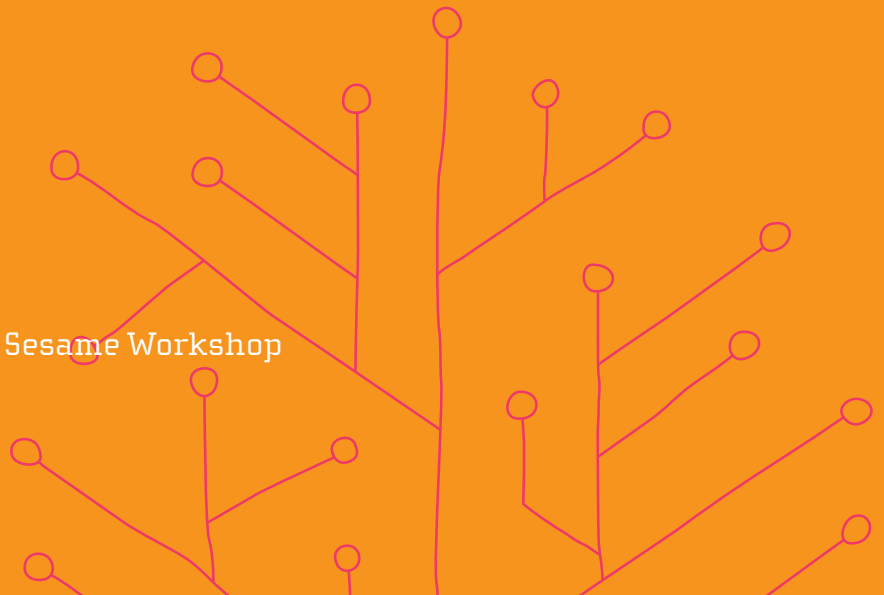**The Families and Media Project**

Aprendiendo en casa:

media as a resource for learning among hispanic-latino families

June Lee & Brigid Barron
Winter 2015

The Joan Ganz Cooney Center at Sesame Workshop

About the Authors

Dr. June Lee is the Vice President of International Research at Sesame Workshop. She directs the formative research and summative evaluations for all of Sesame Workshop's global projects and works with partners around the world to elevate the quality and rigor of the Workshop's international research. She has also overseen content development and outreach projects in Asia. June received her Ph.D. in Human Development and Family Sciences from the University of Texas at Austin, where her program of work focused on the contexts and effects of children's media use. She is currently co-editing a book about Sesame Workshop's international work, and has co-authored several reviews and research papers.

Dr. Brigid Barron is an Associate Professor of Education at Stanford and a co-lead of the NSF-funded Learning in Informal and Formal Environments (LIFE) Science of Learning research center that investigates the social foundations of learning across diverse communities contexts, and domains. Her research investigates how digital technologies can serve as catalysts for collaborative learning at home, school, and in the community. A special focus of this work is articulating relationships between the development of interests, learner pathways to expertise, personal social networks, and designed settings for learning. Her work appears in peer-reviewed journals and books.

The mission of the Joan Ganz Cooney Center is to foster innovation in children's learning through digital media. The Cooney Center catalyzes and supports research, development, and investment in digital media technologies to advance children's learning, and is committed to the timely dissemination of useful research. Working closely with its Fellows, national advisors, media scholars, and practitioners, the Center publishes industry, policy, and research briefs examining key issues in the field of digital media and learning.

A full-text PDF of this report is available as a free download from www.joanganzcooneycenter.org.

contents

executive summary

This report examines media use in Hispanic-Latino families with young children in the United States. Drawing from data from a national survey of parents of 2- to 10-year-olds, it extends the findings from an earlier report that sheds light on educational media use among American families (Rideout, 2014). Those findings pointed to the need to more deeply understand how Hispanic-Latino families with young children use media for learning. Hispanic-Latino families hail from a spectrum of language, access, country of origin, generational status, education, and other socio-demographic markers. These analyses aim to add to a fuller understanding of the media experiences and family contexts of children growing up in these families.

In this study, we look at media access among Hispanic-Latino families, children's use of content that parents considered educational, parents' perceptions of their child's learning from educational media, parents' own use of technology for their learning, and parent-child joint engagement in media use. We also describe ways in which media can encourage conversations and extend playful activities. Given the importance of language as a proxy for a range of other socio-economic markers (including income, media access, and generational status), this study also closely examines media use by families that speak only English, only Spanish, and those that speak both languages. Case studies from ethnographic research further illustrate these issues. The report concludes with a set of implications for practitioners, designers, and researchers.

Key Findings

- Access differed by language, with Spanish-only families experiencing least access to digital technologies. Hispanic-Latino families most commonly accessed educational content through television rather than via the computer, video games, or mobile devices. This points to the need to continue to create strong educational television content for this audience, while developing more mobile content (in Spanish and English) that serves their needs.

- Most parents of children who were regular users of educational media reported that their child learned academic skills from media, particularly in reading or vocabulary. Most bilingual and Spanish-only families also reported that their child learned English from educational media, suggesting that many families can benefit from content that supports English language learning.

- In addition to their child's learning, media access also has implications for parents' own learning. The regularity with which parents use the Internet to find information was closely tied to access to a high-speed Internet connection at home. Parents who often used digital technology for learning had children who used educational media more often, highlighting an important association between parents' and children's media use. This suggests that designing intergenerational learning opportunities can be especially powerful.

- Educational media often catalyzed other interest-driven learning opportunities for children, such as initiating dialogue, imaginative play, and asking questions. For parents from Spanish-only homes, educational media also enabled their child to teach them something new. The more often children used educational media, the more often these activities occurred. Parent-child joint engagement on computers, video games, and mobile devices happened less frequently than with television. Spanish-only families generally spend more time in joint media engagement than English-only families. There is value for both parents and children in media content that serves as a springboard for conversation and activities, as well as content that promotes joint media engagement. Such content is sorely needed across all platforms.

- Hispanic-Latino parents—especially Spanish-only speakers—want more information about media for their young child. Community resources have a special role to play in providing technology access and information. Information presented in non-digital formats (such as video or print) remains an important avenue to reach lower-resourced and Spanish-only families. A dearth of Spanish-language resources also hampers parents' ability to become more informed about how to find, curate, and mediate media for their children. More parent resources in Spanish and greater awareness of where those resources might be available will help support parents in their efforts to use media to foster their child's learning.

introduction

National surveys of children's media use paint a portrait of preschool and elementary school children increasingly immersed in technologically mediated activities (Common Sense Media, 2011; 2013; Wartella, Rideout, Lauricella, & Connell, 2014). Television viewing still dominates the average young child's media time, but national surveys show that young children increasingly access digital content on phones, tablets, and desktop computers. One recent national survey indicated that mobile media use time for young children tripled between 2011 and 2013 from an average of 5 minutes a day to an average of 15 minutes a day (Common Sense Media, 2013), with 75% of families owning some kind of networked device. Mobile devices are used to play games, use apps, watch videos, access TV or movies, and read books. During the same two year period, time spent watching TV decreased by 12 minutes to an average of 57 minutes a day. These rapidly changing use patterns have raised many questions, including about the benefits and drawbacks of media time. Of particular importance is gaining a better understanding of how the quality and quantity of young children's engagement with digital media might influence children's learning.
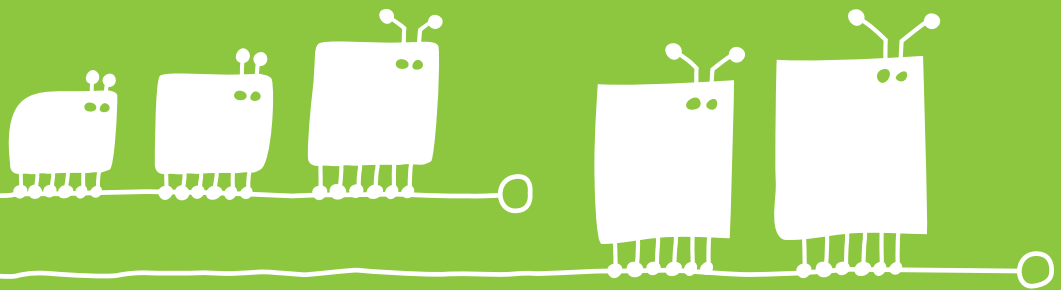
As part of a broader program of research on families and media, in mid-2013, the Joan Ganz Cooney Center and a team of scholars from Stanford University, Northwestern University, and Arizona State University fielded the first study to quantify how much of children's media time parents report to be educational. That study was published in early 2014 (Rideout, 2014). The survey comprised a nationally representative sample of parents of children ages 2 to 10, as well as an oversample of Hispanic-Latino and Black parents. This study confirmed that television still dominates children's media use and showed that most parents believe that their child has learned important academic content from educational media. More than six in ten parents whose children were weekly educational media users reported that media often or sometimes sparked conversations, questions, requests to start projects, or inspired their children to incorporate content from media into their imaginative play. The study also showed that parents believe that much of children's screen time is in fact educational (56 minutes out of 2 hours and 7 minutes of total daily screen time). In addition to these positive findings, there was evidence for disparities in parents' perceptions that digital media contributed to learning. Across subject areas and platforms, Hispanic-Latino parents were less likely than White or Black parents to report that they perceived their children to have learned math, science, or cognitive skills from traditional or digital media experiences. Other patterns in the report also highlighted the need to more deeply understand media use for young children in Hispanic-Latino families (Rideout, 2014).

Several recent reports shed light on the intersection between media, technology, parenting, and family and cultural contexts within the Hispanic population (Fuller, Lizárraga & Gray, 2015; Katz, 2010, 2014; Moran, 2010; Vaala, 2013). To better understand these patterns, this report takes a closer look at the Hispanic subsample of 682 parents of 2-10 year-olds from the Cooney Center's educational media use survey. Ethnographic studies are beginning to show the creative and resourceful practices that Hispanic families develop and share as they use digital tools to learn information, translate English materials,

stay connected with family and friends, help their children with school work, and support family-based interests (Levinson, 2014; Schwartz & Gutierrez, in press). In this report we provide quantitative data from the national survey and also offer several case portraits from our ethnographic research to help illustrate the role that digital media plays in family learning. We were interested in understanding how families' access to devices and parents' own use of digital resources for learning related to children's educational media use and parents' perception of their children's learning. Particularly important for us to understand from a design perspective was the role that media might play as a catalyst for children's questions, their imaginative play, and their interests in related projects and activities. These are markers of engagement with media content and can be drivers of learning and language development as children engage their parents, their siblings and other relatives in content they find of interest (Crowley & Jacobs, 2002). Understanding these patterns can help designers and producers create media experiences that offer opportunities to draw upon children's social context (parents, siblings, and others) as a resource for deeper engagement.

Recent data from the Pew Hispanic Center (Lopez, Gonzalez-Barrera, & Patten, 2013) suggest that gaps in technology access between Hispanic-Latino Americans and other ethnicities are narrowing. In many respects, Hispanic-Latinos are as connected as other groups: They are just as likely to own a smartphone, use social networking sites, and go online via a mobile device as White and Black Americans. Hispanic-Latinos, however, are less likely to own a computer or access the Internet than Whites. The differences in technology adoption *within* the Hispanic population are perhaps more marked. Higher educational attainment, higher family income, being native-born, and being English-dominant or bilingual were consistently related to higher rates of technology adoption (going online in general, going online using a mobile device, owning a cellphone, owning a smartphone, and owning a computer). A national survey of parents of children ages 8 and under (Wartella et al., 2014) revealed similar patterns. Hispanic families had

high access to mobile devices: 68% owned at least one mobile device. The gaps in mobile device and online access between Hispanic and non-Hispanic families is still large, however. They found significant disparities in ownership of digital tools such as smartphones and tablets within the Hispanic population based on language, income, and education (Wartella et al., 2014).

Understanding diversity among Hispanic families is critical if we want to better support learning through digital or traditional media. Hispanic families in the United States vary widely in their countries of origin, how long they have been in the U.S., their levels of formal education, the language spoken at home, and income. Researchers looking at this variation in relation to school performance have found that children living in homes where mostly Spanish is spoken score lower on standardized assessments of reading and math, tests that are given in English (Reardon & Galindo, 2007). Prior research suggests that parents' level of schooling, primary language, income, and discrimination all influence children's early learning, and as we think about how to better design media for family engagement, we need to understand and detail this diversity (Garcia, Jenson, & Scriber, 2009). As we show in this report, the majority of families see their children's engagement and interest in media reflected in question asking, requests to do projects, conversations, and in their imaginative play. Many report that children are learning English and early academic skills from their educational media use. Additionally, some parents report that their child has taught them something based on what they have learned from media. These findings are critically important for us to better understand and highlight the potential of well-designed media to serve as a catalyst for deeper learning.

Media as a catalyst for learning

The extensive body of research on young children's learning from television supports the idea that media are most powerfully a learning resource when they serve as a catalyst for conversation and further activity. A major finding of the educational television research work done during the post

Sesame Street era was that co-viewing media with others enhances learning. Cook and colleagues (Cook et al., 1975) tested the hypothesis that parents' and others' guidance during television viewing, not viewing itself, explained why earlier researchers found *Sesame Street* to be effective in their experimental studies of the show's impact on literacy skills. Their analysis showed that co-viewing could account for some, but not all, of what children had learned in the prior studies. Learning was particularly supported when parents discussed what they were jointly seeing. A number of subsequent studies have shown that active co-viewing can enhance what children learn from educational television (Collins, Sobol, & Westby, 1981; Lemish & Rice, 1986; Linebarger & Walker, 2005; Nathanson, 2001a, 2001b; Reiser, Tessmer, & Phelps, 1984; Reiser, Williamson, & Suzuki, 1988; St. Peters, Huston, & Wright, 1989). Active co-viewing practices that supported learning included posing questions to children, labeling objects, and connecting story elements from the television show to children's life experiences (see Linebarger, Taylor-Piotrowski, & Vaala, 2007 for a review). In an environment that now comprises multiple screens and platforms, co-viewing now extends to co-engagement or joint media engagement (Stevens & Penuel, 2010; Takeuchi & Stevens, 2011). Joint media engagement refers to spontaneous and designed experiences of people using media together. Modes of joint media engagement include viewing, playing, searching, reading, contributing, and creating, with either digital or traditional media. These forms of collaboration around digital and traditional media are hypothesized to support learning by providing resources for meaningful communication in a particular situation, as well as for future situations. Sharing media in these ways can also foster the development of long-term interests.

We built upon these insights as well as ethnographic research from the LIFE Center at Stanford University, Northwestern University, University of Washington, and SRI International (Barron, Levinson, & Matthews, 2013; Penuel et al., 2010; Stevens, Satwicz, & McCarthy, 2008) when creating some of the survey items to capture the ways in which media serve as a catalyst for other activities. We created an index that asks

parents how often their children engage in activities sparked by media, including starting conversations, asking questions, requesting to engage in projects, and engaging in imaginative play activities. We also queried the frequency with which parents and children use media together. We know from prior research that children frequently teach their parents and siblings about topics when they possess relatively more expertise (Barron, Martin, & Mertyl, 2014; Barron, Martin, Takeuchi, & Fithian, 2009), so we asked parents whether their child had ever taught them something new based on media. Children's roles as brokers and translators have also been documented in studies of immigrant families (Valdés, 1996; Katz, 2010) and we expected to find parent reports of learning from their children in this sample.

Many scholars have underscored the importance of understanding Hispanic-Latino families on their own terms rather than as a foil to mainstream, White, middle-class families (Fuller & Garcia-Coll, 2010; Katz, 2013). This report is an effort to contribute to this understanding. It focuses on the findings from the Hispanic-Latino subsample of a national survey on 2- to 10-year-olds' use of educational media in the United States (Rideout, 2014). It also examines the diversity among these families, delineated by language (English-only vs. bilingual vs. Spanish-only). Socio-demographic markers such as income and education are often the focus of investigations of media use, but language is crucial in its own right. Language is also strongly related to these key socio-economic variables and is important in influencing the array of media options that may be available to young children. Research also suggests that the primary language spoken at home is a stronger predictor than ethnicity of parents' perceptions of the influence of media (television) and desire for more Latino programming (Moran, 2010). Though the majority of analyses focus only on the Hispanic-Latino sample, we do make comparisons to the non-Hispanic sample to report on differential access to computing tools and in relation to the time parents and children spend jointly engaging in educational media.

We present an overview of the key findings from these analyses, followed by a detailed description of the results and their implications for research, design, and practice. The report also shares case studies from ethnographic research with Hispanic-Latino families in the Northeast and California, conducted by the Joan Ganz Cooney Center and Stanford University. These case studies help to punctuate the quantitative data with real-life vignettes of the dynamics we describe. Based on the findings in this report, we propose a research agenda that will strengthen our understanding of the ways in which parents and children use media, its relations to important learning outcomes, and ways to design media that serve as a springboard for both joint media engagement as well as for other non-media activities.

key findings

1. Hispanic-Latino families report their children are using educational content across traditional and digital media devices, though lack of access to computing devices constrains access to digital content for many families.

Television or DVD is the most common platform for accessing educational content and most parents in all language groups report that their child accesses such content on a weekly basis. Fewer parents report that their children access educational content via online video, through games on consoles or handheld devices, through mobile apps, computer games or through other computer activities like visiting websites. Breaking results down by home language, Spanish-only families are the least likely to report that their children ever accessed educational content through platforms other than TV or DVDs. Spanish-only families are the least likely to have a computer (other than the one provided for survey participation),[1] a tablet, an e-reader, or Internet access at home, and this may partially explain differential access to educational content. Families were far more likely to watch educational television than they were to use educational content on other platforms (computers, video games, and mobile devices) in the prior day.

2. Hispanic-Latino parents perceive that their children are learning from media, though Spanish-only families perceive less learning in the domains of math and science.

The majority of Hispanic-Latino parents who indicate that their children used educational media once a week or more report that they developed academic skills from this use. Television is by far the most common way that this content is accessed, and learning related to reading and vocabulary is most commonly perceived across language groups. Spanish-only families are the least likely to perceive that their child learned a significant amount of math or science from video games, computers, or mobile devices. A majority of bilingual and Spanish-only families report that their children are learning some or a lot of English from media.

[1] Survey participants who did not own a computer were given a laptop and dial-up access in order to participate in the panel. Questions on computer ownership thus focus on ownership of a computer other than the one provided by the Knowledge Panel.

3. In addition to children's learning, media access also has implications for parents' own learning opportunities.

For many parents, digital technologies can be a lifeline for connecting to the world and for finding information. Digital devices can help them navigate resources in the community, enrich their family life, help their children with homework, and other important activities. Parents' use of technology to learn is more frequent for those who have home access to a high-speed Internet connection, or smartphones. Parents' use of technology is also related to how regularly their child uses educational media, suggesting that parents' access to and familiarity with technology may be consequential for their child's use of educational content across media platforms, and especially for computer-related activities (game and non-game), online videos, and mobile devices. This relationship may be mediated by access, or it may point to the possibility that using technology for learning is mutually reinforcing for both parents and children. In either case it points to the need for models that can support access to tools and powerful content for parents and children simultaneously.

4. Hispanic-Latino families report that child-centered activities and conversations are often catalyzed by educational media, regardless of the language spoken at home.

Our findings suggest that educational media serve dual purposes in children's learning: It not only provides a direct conduit to content, but it can also be a springboard for other important dialogue and activities that support learning. Children from all three language groups (Spanish-only, bilingual, and English-only) are equally likely to engage in follow-up activities such as conversations, imaginative play, and asking questions. Parents from Spanish-only homes are most likely to report that their child taught them something they didn't know based on educational media, confirming other research that documents children's roles as media brokers and translators in immigrant families (Katz, 2014; Valdez, 2003). The regularity of educational content use across all platforms is linked to greater use of media as a springboard for other activities. This implies that a range of media platforms have the potential to spur interest-driven non-media activities and conversations, and that regular access to educational content across a greater breadth of devices may catalyze more of these.

5. Compared to TV, joint media engagement (JME) happened less frequently around other media. Spanish-only families spend more time engaged in JME than English-only families.

Many parents did not report any JME with their child on mobile devices, the computer, or video games the day prior to the survey, whereas three-quarters of the parents had co-viewed television. Among those who engaged in JME, however, a substantial amount of time (ranging from 33 to 104 minutes) was spent doing so, suggesting that once parents and children are using media together, the co-engagement tends to be sustained. The data also suggest that Spanish-only families spend more time on JME than English-only families.

6. Hispanic-Latino parents—especially those in Spanish-only families—want more information about media for their children.

Hispanic-Latino parents—especially those who speak only Spanish—express a desire for more information about media for their children. This desire likely stems from a real need for information (particularly in a context where educational media could be more important as a source of learning for families with limited English proficiency), as well as a lack of readily available Spanish-language resources. This speaks to the need to create Spanish or bilingual resources for parents that are accessible and easy to understand. Given that digital media ownership is comparatively low in Spanish-only families, these resources should be made available through multiple means, including print, TV, and radio.

the survey

Data from the survey came from a nationally representative online panel of parents of children ages 2 to 10 administered by GfK. Parents completed the survey with a focal child in mind. This online panel—known as the Knowledge Panel— is randomly recruited through probability-based sampling, and families are equipped with a laptop and Internet access as part of their participation in the panel if necessary. The survey (N = 1,577) included an oversample of Hispanic-Latino (n = 682) and Black (n = 290) parents. This report presents data from the Hispanic-Latino oversample. The survey was offered in both English and Spanish, and 55% of the Hispanic-Latino sample elected to complete it in Spanish. Among them, 95% of respondents who spoke only English at home completed the survey in English; 40% of bilingual respondents took the survey in English, and 98% of respondents who spoke only Spanish at home took the survey in Spanish. Sample weights were applied to all data in this report to achieve national representativeness for the Hispanic-Latino respondents.[i] More information about the survey, as well as findings from the overall sample, can be found in Rideout (2014).

Sample demographics

Table 1 describes the sample demographics. About a third of the parents in the sample did not complete high school, a third had completed high school, and a third had some college education or higher. More than half the households have an income of less than $50,000 a year; 29% of families make less than $20,000 a year.[2] Six in ten of the parents surveyed are women. About half the parents are employed. Almost half of the parents speak a non-English language at home,[3] either exclusively or mainly. Half of the respondents trace their origins to Mexico, while the rest come from Puerto Rico, Cuba, Central and South America, and the Caribbean.

Language groups

There is considerable diversity within the Hispanic-Latino population in the United States; this is linked to differences in generational status, education, income, citizenship status, and language proficiency. These socio-demographic dimensions are important for understanding the resources, media, and family practices in Hispanic-Latino households. For this report, the main dimension we focus on is the language spoken at home: English only, bilingual, or

Table 1: Sample demographics (N = 682)				
Focal child age (average)	5.98 years	Citizenship		
		Not a citizen	46.0%	
Gender of focal child (% girls)	50.1%	Naturalized citizen	17.1%	
		Born citizen	36.9%	
Parent gender (% women)	60.6%			
		Language spoken at home		
Parent education		English only	17.0%	
Less than high school	31.7%	Mainly English and some		
High school	33.4%	non-English language	36.0%	
Some college	21.0%	Mainly non-English language		
Bachelor's degree or higher	13.9%	and some English	35.2%	
		Only non-English language	11.7%	
Household income				
< $20,000	29.1%	Country of origin		
$20 – 49,000	32.6%	Mexican, Mexican-American, Chicano	58.1%	
$50 – 99,000	29.3%	Puerto Rican	5.8%	
$100,000+	9.0%	Cuban	1.8%	
		Central American	8.6%	
Employment status		South American	6.4%	
Paid employee	47.0%	Caribbean	1.0%	
Self-employed	9.2%	Other Hispanic	18.3%	
Not working—temporary layoff, looking for work, retired, or disabled	17.2%			
Not working—other	26.6%			

[2] As a point of reference, the federal poverty guideline is $23,624 for a family of four.
  https://www.census.gov/hhes/www/poverty/data/threshld/

[3] For this report, we assume that the non-English language is Spanish and will refer to "non-English" as "Spanish."

Spanish-only. Bilingual families comprise those that either speak mainly English plus some of another language, or mainly a non-English language (presumably Spanish) and some English. We highlight language use at home because it is correlated with generational status (Pew Hispanic Center, 2013), is related to other factors such as income and education, and has important implications for families' access to content and learning opportunities. Bilingualism can be a source of cognitive advantage (Carlson & Meltzoff, 2008; Hakuta, 2011, Kuhl, 2011) and may facilitate access to a broader media environment that involves both English and Spanish media (Katz, 2010).

Most of the families (72%) in the sample are bilingual families. Relatively few (12%) speak Spanish only, whereas the rest (17%) speak English only.[4] Table 2 shows the income, education, citizenship status, and employment status of the three groups. The three groups differ substantially across all four socio-economic dimensions. The families who speak only English have the highest income and education, followed by bilingual households, then Spanish-only households. Almost two-thirds of the English-only families have an income of $50,000 or greater, whereas this is true of one-third of the bilingual households and one-fifth of the Spanish-only families. The English-only families are most likely to be citizens (96% are citizens), whereas the Spanish speaking families are more likely to be non-citizens (82% are non-citizens). The English-only and bilingual parents are twice as likely to be employed as parents who speak only Spanish.

The differences among the three language groups are marked, and language captures many different dimensions of socio-economic status, all of which are confounded with one another. It would be

Table 2: Demographics by language group			
	English only (n = 117)	Bilingual (n = 486)	Spanish only (n = 80)
Household income			
< $25,000	19.0%	28.5%	47.5%
$20-49,000	16.4%	36.5%	32.5%
$50 – 99,000	50.9%	27.2%	11.3%
$100,000+	13.8%	7.8%	8.8%
Parent education			
Less than high school	10.3%	30.5%	71.3%
High school	35.9%	34.8%	21.3%
Some college	37.5%	22.0%	5.0%
Bachelor's degree and higher	26.5%	12.8%	2.5%
Citizenship			
Born citizen	85.7%	30.0%	5.3%
Naturalized citizen	10.7%	19.5%	13.2%
Non-citizen	3.6%	50.6%	81.6%
Employment (Working)	63.7%	59.0%	27.9%

[4] These proportions differ significantly in comparison to the non-Hispanic families in the national survey, where 91% reported that they speak only English at home; 9% are dual-language families, and 0.3% speak a non-English language only.

difficult—if not impossible—to disentangle the effects of individual socio-demographic variables. Collectively, they have important implications for a range of experiences for the family, from their access to devices, the ways they use media, and their experiences with media content. In this report, we use language as a proxy for a range of socio-economic markers.

Subsamples for analyses

Because many survey questions were asked based on respondents' answers to previous questions on media use and access, several different subsamples are used in the analyses. Table A in the Appendix provides the sample sizes for each subsample; they will be referenced throughout the report. Because the goal of this report is to draw out implications for designers, researchers, and educators, we chose to compare how the families in these three language groups

are finding and using media with the assumption that they may have different needs with respect to content and access to tools. A consequence of this choice is that sample sizes for some questions are small. We note this where relevant.

Media environment

Respondents reported on the types of media devices they owned. For the purposes of this survey, this also includes connectivity that facilitates access to content and affects the users' experience on devices, such as high-speed Internet and cable/satellite. The surveyed families live in media-rich homes (see Fig. 1), though there is considerable variability in media ownership. Access to traditional media is prevalent among Hispanic-Latino families: Television is nearly ubiquitous, and nearly three-quarters of families

Figure 1: Percent ownership of devices

Device	Percent
TV	98%
Laptop/desktop computer	74%
Cable/satellite	73%
High speed internet	68%
Video game player	66%
Smartphone	62%
Handheld video game player	51%
Tablet	44%
iPod Touch/video iPod	38%
Educational game device	28%
E-reader	16%
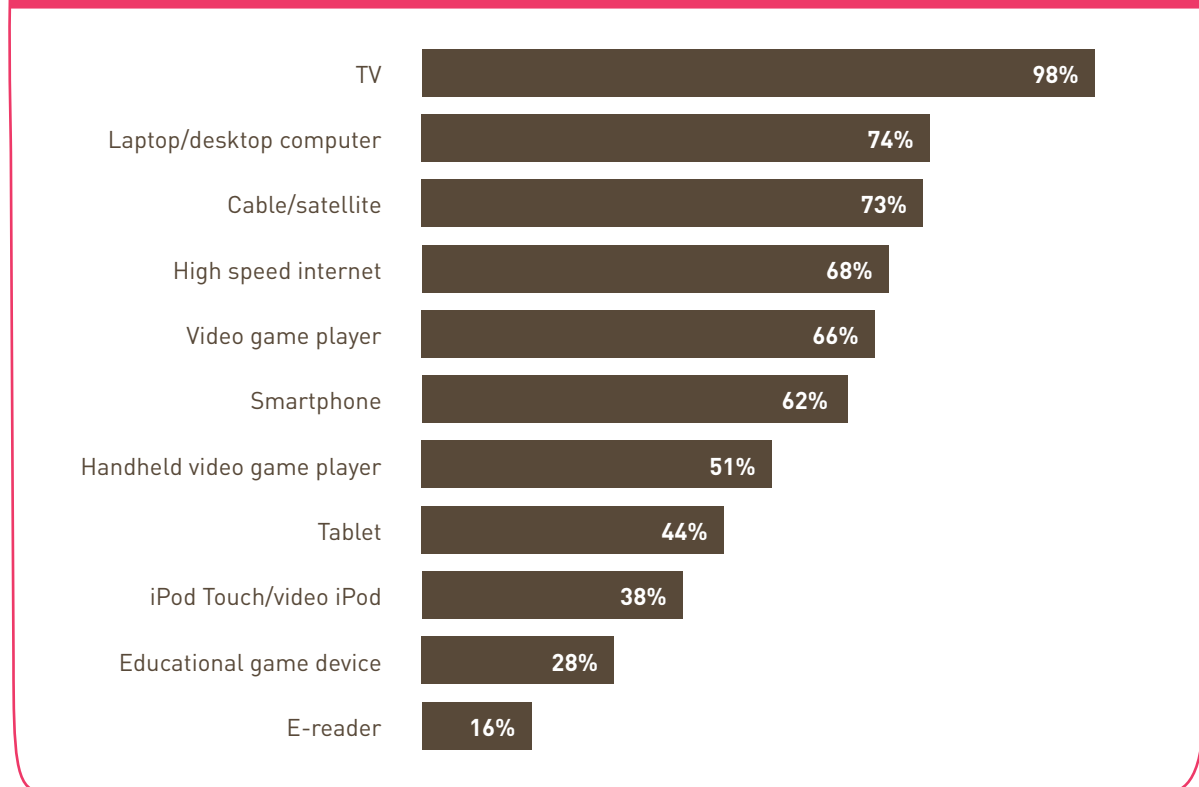
also have a computer[5] and cable/satellite. Access to high-speed Internet and more recent technologies and tools (tablets and smartphones) is more uneven and is linked to demographic variables within the Hispanic sample.

With a few exceptions, Hispanic-Latino families are less likely to own media devices in the home compared to non-Hispanic White and African-American families (see Table 3). Differences between Hispanic-Latino families and non-Hispanic White households are particularly stark in access to high-speed Internet, tablets, computers, educational game devices, and e-readers. Hispanic-Latino families are also much less likely to have educational game devices and e-readers, compared with African-American families.

Overall, families have an average of 5.4 different types of devices in the home, but there is considerable range in households' media environment (see Fig. 2), ranging from one type of device to ten.

Table 3: Comparison of media access by ethnicity

	Hispanic-Latino (% ownership)	Difference in ownership compared to Hispanic-Latino Families	
		Non-Hispanic White	African-American
TV	98	–1	0
Laptop/desktop computer[5]	74	+23*	+12*
Cable/satellite	73	+3	+7
High-speed Internet	68	+24*	+8
Video game player	66	+17*	+9
Smartphone	62	+11*	+14*
Handheld video game player	51	+1	-3.5
Tablet	44	+16*	+6
iPod Touch/video iPod	38	+6	-1
Educational game device	28	+17*	+32*
E-reader	16	+18*	+17*
Average number of devices at home	6.1	+1.5*	+1.2*

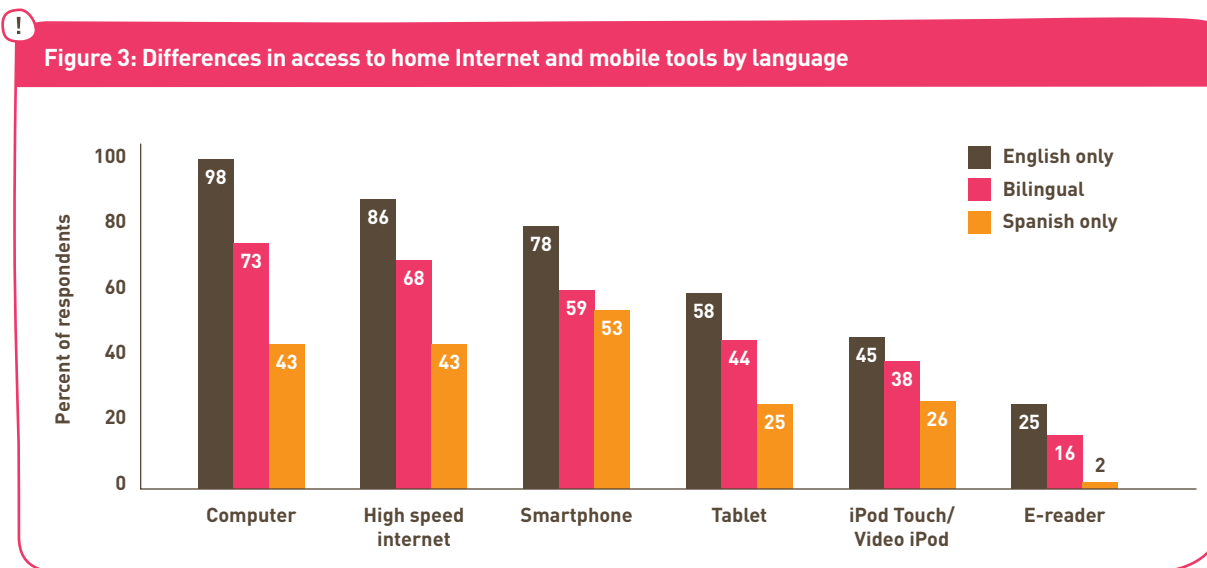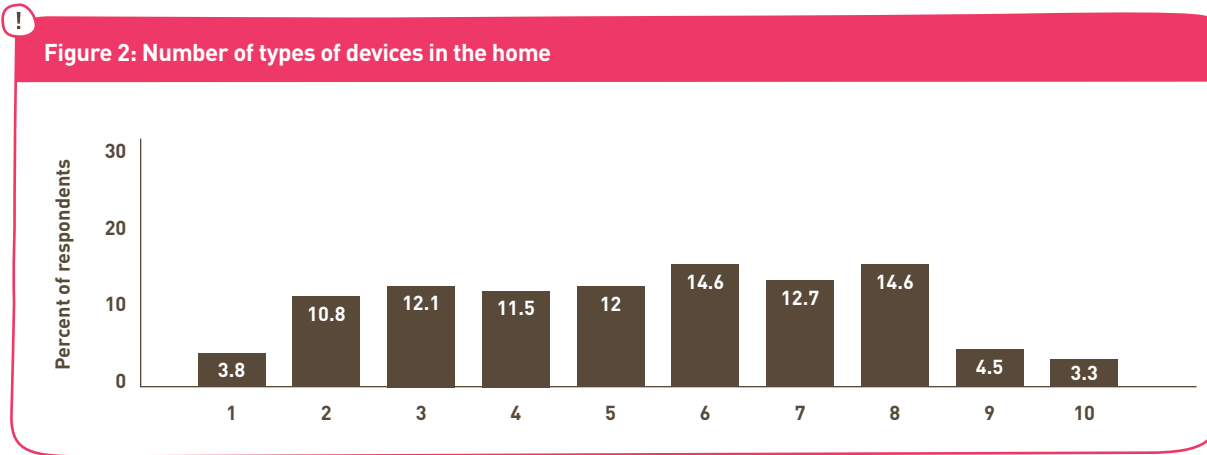*Differences in comparison to Hispanic-Latino families that are statistically significant at $p < .05$.

[5] Throughout this report, computer ownership/access reflects ownership of a computer other than the one provided to families for participation in the panel.

Language groups

For almost all platforms, families that speak only English own the most types of devices (7.3 types), followed by bilingual households (6.0 types). Spanish-only homes have more limited access (4.7 types[6]), particularly for computers, tablets, educational game devices, and e-readers. Spanish-only families are least likely to have access to the digital technologies—tablets, computers, high-speed Internet, and smartphones (see Fig. 3) —that have become integral to participating in a society that is increasingly digitally connected and knowledge based. These findings mirror those from the Pew Hispanic Center's survey on the differences in technology adoption within the Hispanic population based on demographic factors such as dominant language (Lopez, Gonzalez-Barrera, & Patten, 2013).

This uneven access has important implications for the variety of tools at families' disposal for learning and finding information. While about half the Spanish-only families have a smartphone, access to computers and high-speed Internet is lower. This is consistent with recent studies by the Pew Hispanic Center, which suggest that mobile technologies are providing an alternative pathway to the Internet among groups that have

Figure 2: Number of types of devices in the home

Figure 3: Differences in access to home Internet and mobile tools by language

[6] ANOVA for access was statistically significant; $F_{(2, 233)} = 21.85$, $p < .001$. Post-hoc tests confirmed that all three language groups were significantly different from one another.

traditionally trailed behind others in Internet access. In fact, researchers found that a small but significant portion of Hispanic-Latinos use their mobile phones instead of a home Internet connection (Livingston, 2011). Affordability could be an important reason why some Hispanic-Latino families rely on their phones to access the Internet rather than a computer. A smartphone and data plan often cost less than a computer and home broadband subscription. Cost appears to be only one of many factors accounting for the substitution of mobile devices for computers, however. Even when researchers controlled for income and education, they could not fully account for these differences (Livingston, 2011). The convenience, portability, and ease of use of mobile devices may also be key considerations for their adoption.

Mobile phone ownership among adults also does not necessarily correspond to opportunities to use the devices for learning among children. A recent study found that 85% of young children have used an adult's mobile device (known as the "pass-back effect"), but about a third of parents do not allow their child to use their device (Chiong & Shuler, 2010). "Pass-back" tends to happen in the car, in short sessions, and focus on games (Chiong & Shuler, 2010)—all of which speak to the affordances of mobile technologies but may not engender sustained, deep engagement. Others have noted that the quality of engagement with the Internet differs between mobile devices and computers. Accessing the Internet through a phone seems more closely related to entertainment and consuming (rather than creating) content, and there are important limitations to what users can do on a smartphone compared to a computer (Washington, 2011). Applying for a job or updating a resume, for instance, are more easily accomplished on a computer than a mobile phone. Many websites are still best viewed on a computer browser and are not optimized for mobile browsers, potentially rendering the experience of seeking information or resources a slow, frustrating, and inefficient experience. For school-aged children especially, sustained activities such as homework or research are not feasible on a mobile device.

Therefore, while it is encouraging that mobile phones may be narrowing the digital divide by providing a tool with which to access the web, some activities made possible by mobile devices are qualitatively different from those on a computer (e.g., online research or information finding). Moreover, about half of Spanish-only families do not have a smartphone or a computer, indicating that the divide persists within the Hispanic-Latino population (in line with data from Pew Hispanic Center; Lopez, Gonzalez-Barrera, & Patten, 2013). These differences have important equity implications for Hispanic-Latino children's and families' access to learning opportunities and information.

Use of educational content

Parents who indicated that their child engaged in a given media activity (watch TV/DVDs, watch online videos, play video games, play games on mobile devices and the computer, and engage with non-gaming activities on the computer) reported on the frequency of their child's use of educational content on the platform based on an eight-point scale that ranged from "never" to "several times a day." Educational content was defined for the parent as "products that teach a child some type of lesson, such as an academic or social skill, or are good for a child's learning or growth." Thus, references to educational content denote media content that the parent considered educational. Researchers did not independently validate parents' assessments of educational value. Survey questions also did not address the language in which educational content is used, thus making it impossible to know whether there are important patterns in the language of media consumption in Hispanic-Latino families.

Among those with access, watching educational television remains the most frequently reported activity, followed by playing mobile games and computer games (See subsample A in the Appendix); children are likely to have used educational content on these platforms at least weekly (76% for TV, 63% for mobile games, 60% for computer games; see Table 4). Access itself is variable, however. Compared to TV viewing,

fewer parents report educational mobile gaming and educational computer gaming.

Parents whose child used a device the previous day (see Subsample D in the Appendix), also reported on how much time their child spent using content that they considered educational. Table 5 shows that among children who use each platform, 63% watched educational TV, 19% engaged in educational computer activities, 21%

played educational video games, and 24% used educational content on mobile devices the previous day. On average, children spend more than an hour watching educational TV, about a half hour with educational content on the computer and mobile devices, and less than 15 minutes on educational video games (see Table 5. Note that time spent includes users who did not use educational media the day before.). Among those who use educational content, considerable

Table 4: Frequency of educational content use by platform

	n*	Never	"Less than once a month" to "several times a month"	"Once a week" to "several times a week"	"Once a day" to "several times a day"
TV	637	4.7%	19.9%	37.6%	37.9%
Online video	521	17.2%	30.7%	35.0%	17.1%
Video games (console or handheld)	415	18.0%	38.1%	28.0%	15.9%
Mobile games	363	8.6%	28.0%	36.4%	27.0%
Computer game	423	7.8%	32.6%	42.9%	16.7%
Other computer activities	521	14.3%	30.9%	36.4%	18.4%

* Data only pertain to parents whose children used the relevant platform: TV/DVD, computer, video game, and mobile device (subsample A described in the Appendix).

Table 5: Average time spent with educational media on the previous day among users of each platform

	Minutes among users of the platform	% of users who used educational content	Number of children who used educational content
TV	72	62.3%	299
Computer	29	18.6%	57
Mobile	23	24.2%	72
Video Games	13	20.7%	42

time is spent doing so: 103 minutes for TV, 65 minutes for computers, 44 minutes for video games, and 51 minutes for mobile devices. Because of the reduction in sample size, we do not compare the amount of time for the three language groups.

Language groups
Figure 4 shows access to and use of educational content on various media platforms. What is striking is that access is still limited for many children, especially for those in Spanish-only homes. Most children in the Spanish-only group do not have home access to mobile devices or computers at all. Where there is access, however, high proportions of children are using educational content on a regular (weekly) basis across language groups, suggesting there is significant potential to support language and academic skills with high quality content. Regardless of language, children accessed computer games and activities more commonly than mobile games.

There was little variation in the regular (weekly) use of educational content by language for television viewing and non-gaming computer activities (see Fig. 4). Among children who engage with different media platforms, those in bilingual families and Spanish-only families are just as likely as English-only families to use educational media weekly. In some instances, Spanish-only families are more likely to report the use of educational content relative to the other groups, particularly for mobile games and video games. It is possible that for those families with access, these platforms serve as an educational resource to a greater degree than in either English-only or bilingual homes.

Perceptions of learning about math, science, and reading

The survey also examined parents' perceptions about their child's learning about various subjects on different media platforms. Parents whose children used educational content on TV/DVDs, video games, computers, and mobile devices at least once a week were asked to note how much they thought their child learned about math, science, and reading[7] from these platforms. (Response options ranged on a four-point scale from "nothing" to " a lot.") It is important to note that the respondents for these questions constitute a subset of the sample and exclude those who do not have access to the platform and who do not use educational content on the platform at least weekly. It is also important to note that the sample size for Spanish-only families is less than 30 for non-TV platforms. Though this represents only a third of the Spanish-only families, we still think it is important to understand the perceptions of parents whose children do use educational media on these newer platforms. (See Table A, Subsample C for respondents who were included in this set of questions.)

Table 6 shows the percent of parents who reported that their child has learned "some" or "a lot" about math, science, and reading/vocabulary from the four platforms. As we've noted, many children do not use educational media through interactive platforms like video games, computers, or mobile devices (see Fig. 4). Of those who use educational media at least weekly, at least half of parents perceived some learning benefits. TV is more commonly available as a source of educational content, with over three-quarters of parents reporting regular use and most parents reporting learning.

Reading is the subject that parents feel their child has learned the most about from media (see Table 6); 70-80% of Hispanic-Latino parents whose children are weekly users of educational media feel that their child has learned about reading or vocabulary from all four platforms. In contrast, science is a subject that was less well-served by media. Nonetheless, about 50% of parents think that their child learned some or a lot about science from any given platform. Overall, vast differences did not emerge in parents' perceptions of learning about math, science, and reading from

---

[7] The survey questions covered a range of subjects: math, science, reading/vocabulary, social skills, art/ or culture, and healthy habits. For the purposes of this report, we will focus on three of the subjects that have a more academic orientation: math, science, and reading/vocabulary.

Figure 4: Access to and use of educational content across media platforms, by language

	English only — n = 116	Bilingual — n = 486	Spanish only — n = 80
Mobile games	Some access 51%, No access 49% → 66% of these children play educational games weekly	Some access 50%, No access 50% → 67% of these children play educational games weekly	Some access 34%, No access 66% → 96% of these children play educational games weekly
Computer games	Some access 58%, No access 42% → 58% of these children play educational games weekly	Some access 60%, No access 40% → 65% of these children play educational games weekly	Some access 37%, No access 63% → 73% of these children play educational games weekly
Computer activities	Some access 65%, No access 35% → 69% of these children access educational content weekly	Some access 69%, No access 31% → 62% of these children access educational content weekly	Some access 45%, No access 55% → 69% of these children access educational content weekly
Video games	Some access 57%, No access 43% → 59% of these children use educational video games weekly	Some access 50%, No access 50% → 49% of these children use educational video games weekly	Some access 40%, No access 60% → 78% of these children use educational video games weekly
Online video	Some access 58%, No access 42% → 54% of these children watch educational video online weekly	Some access 60%, No access 40% → 65% of these children watch educational video online weekly	Some access 46%, No access 54% → 78% of these children watch educational video online weekly
TV/DVD	Some access 86%, No access 14% → 80% of these children view educational TV weekly	Some access 89%, No access 11% → 79% of these children view educational TV weekly	Some access 95%, No access 5% → 80% of these children view educational TV weekly

Table 6: Among weekly educational content users, percent of parents who felt their child learned "a lot" or "some" about math, science, and reading from different platforms

	TV/DVD	Video games	Computer	Mobile devices
Math	67.3%	69.7%	69.9%	61.7%
Science	56.8%	47.1%	52.5%	50.0%
Reading/Vocabulary	79.7%	75.1%	76.5%	71.0%

Note: Percentages are reported among parents who report at least weekly use of educational content on each platform. Percentages exclude missing responses (including those where parents thought that the subject was not relevant for their child).

different platforms. Additionally, marginally fewer parents think that their child learned a lot or some from mobile devices compared to other platforms, but the difference is not large.

Language groups
For analyses by language, it is important to note that the sample sizes become quite small for English-only and Spanish-only respondents, because parents answered these questions only if their child had access to the platform and used educational content weekly (see Subsample C in the Appendix for sample sizes by language group). Most children are not accessing educational content on most of the platforms.

The pattern found in the overall sample is replicated in the language groups: Parents report that their child has learned the most about reading and the least about science across all four platforms. However, the three groups are distinct in how likely they are to think that media contributed to their child's learning (see Table 7). Parents from Spanish-only homes report that children learned about reading from these educational media as much as those from English-only and bilingual homes. There is more variation for math and science. Spanish-only speakers are least likely

to feel that their child has learned about these subjects from media, whereas English-only parents are most likely to report learning. Bilingual parents fell in-between, but differences between bilingual and English-only parents are not statistically significant. Specifically, Spanish-only speakers are least likely to report substantial learning about science from TV, math from video games, math from computers, and math and science from mobile devices. It is unclear why these differences occur. It may be that English-only parents (who also have higher income and education) perceive more learning because they have access to more or better content for their children.

Despite the substantial proportion of parents that perceive learning benefits, analyses of the larger sample (Rideout, 2014) reveal that compared to Black and White parents, Hispanic-Latino parents are the least likely to report that their child learned about various subjects through different forms of educational media. Yet when asked to rate the importance of different sources of learning (teachers, grandparents, friends, books, media, etc.) for their child (from "not at all important" to "very important"), Hispanic-Latino parents report that media (TV and electronic media) are more important than do non-Hispanic White parents.

Table 7: Among educational content users, percent of parents who felt their child learned "a lot" or "some" about math, science, and reading from different platforms, by language group

	TV/DVD	Video Games	Computer	Mobile Devices
English Only				
Math	72.0	84.8[a]	81.9[a]	76.9[a]
Science	68.6[a]	48.3	61.8	67.5[b]
Reading/Vocabulary	85.2	84.5	79.9	84.5
Bilingual				
Math	65.7	69.6[b]	64.1[b]	63.3[c]
Science	57.1[b]	49.4	46.7	49.5
Reading/Vocabulary	78.5	72.9	68.8	65.7
Spanish Only				
Math	58.2	37.3[ab]	36.4[ab]	31.4[ac]
Science	29.2[ab]	27.9	31.1	28.9[b]
Reading/Vocabulary	73.8	65.0	73.4	83.2

Note: Percentages are reported among parents who report at least weekly use of educational content on each platform.
Percentages exclude missing responses (including those where parents thought that the subject was not relevant for their child).

Within each column, by subject percentages with the same superscript are statistically different from each other at p < .05.

Learning English

Respondents who indicated that they speak a language other than English at home were asked the degree to which their child has learned English from educational media. Note that because this question was not filtered by media access, the sample size is more robust (n = 515). Parents who speak Spanish only are significantly more likely[8] to report that their child has learned English from educational media than are those who speak both languages. Nearly all (92%) parents in Spanish speaking households feel that their child learned English "somewhat" or "a lot" from educational media (see Fig. 5). Most parents (81%) in bilingual homes feel the same.

The role of educational media in facilitating English language learning is echoed in Katz's (2014) study of immigrant families. Parents and children mentioned programs such as Sesame Street as a way for their child to learn English, and parents themselves learned English as well. Children also helped their parents to summarize the plot when they watched movies together, thus refining their narrative skills. In many ways,

[8] $F_{(1, 512)} = 4.33$, p < .05.

media content does not have to have an explicit goal of teaching English for immigrant families to benefit from it.
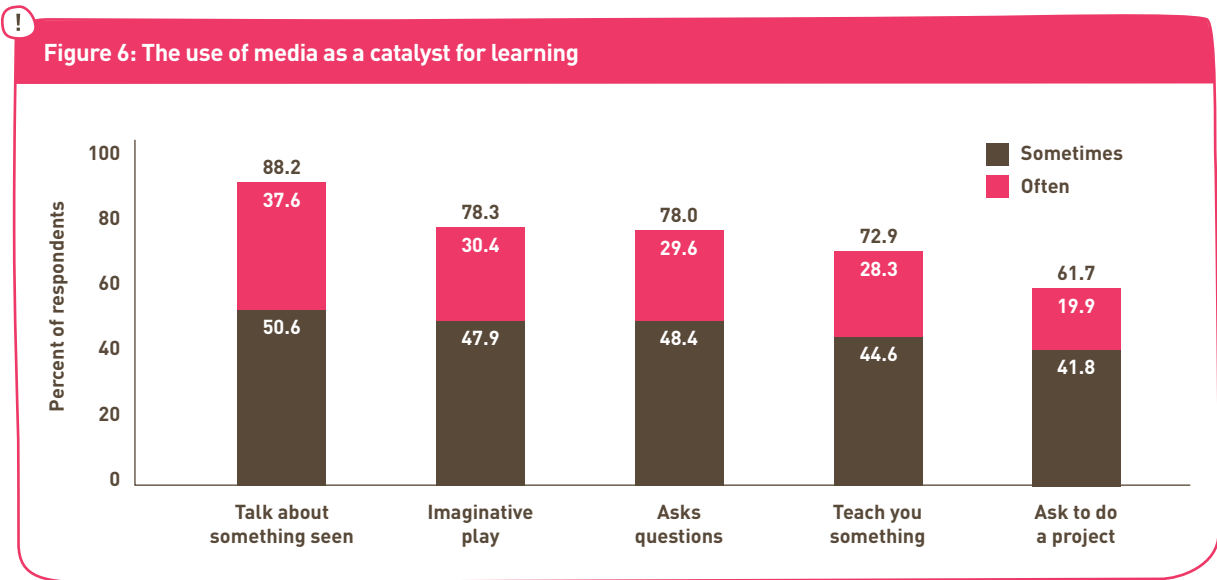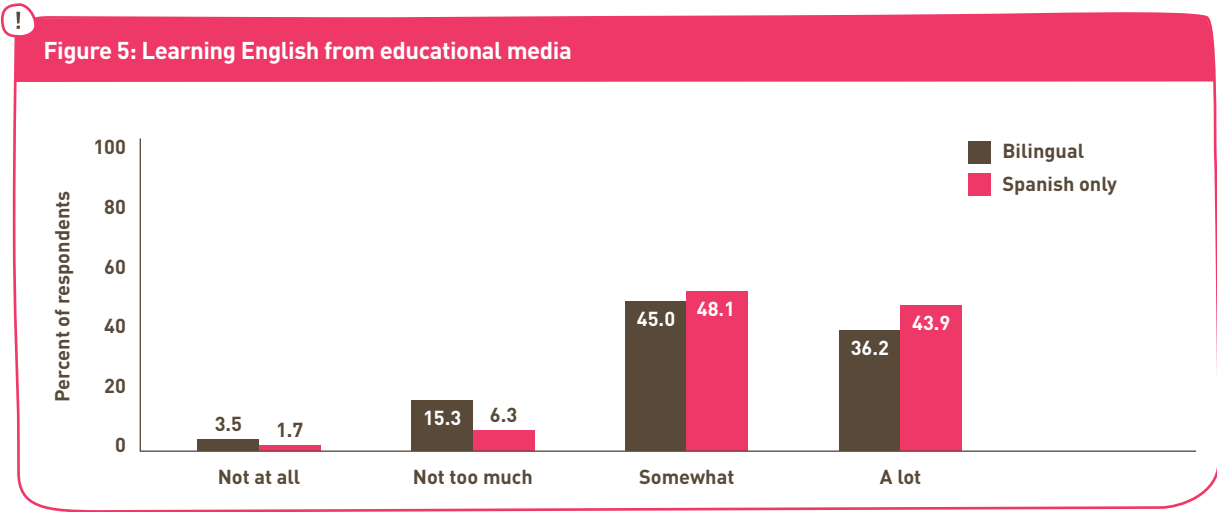
Media as a catalyst for learning

In addition to direct learning from media content, educational media can serve as a catalyst for related learning activities by engaging children's interests, and serve as a springboard for other non-media activities. Media content can also provide a prompt for parents to have conversations with their young child; discussing what they saw or did onscreen can support children's learning

and language development (Dyson, 1997; Fender, Richert, Robb, & Wartella, 2010).

The survey probed the use of media to spur other activities among those who reported at least weekly use of educational content on any platform (n = 551) and offers strong evidence that educational media spark other child-centered activities and conversations in Hispanic-Latino families.

Figure 6 shows the percent of parents who report that their child "sometimes" or "often" engages in these activities. Children most frequently engage in conversation (talking about something they

Figure 5: Learning English from educational media

Legend: Bilingual, Spanish only

Percent of respondents (y-axis 0–100)

	Not at all	Not too much	Somewhat	A lot
Bilingual	3.5	15.3	45.0	36.2
Spanish only	1.7	6.3	48.1	43.9

Figure 6: The use of media as a catalyst for learning

Legend: Sometimes, Often

Percent of respondents (y-axis 0–100)

	Talk about something seen	Imaginative play	Asks questions	Teach you something	Ask to do a project
Often	37.6	30.4	29.6	28.3	19.9
Sometimes	50.6	47.9	48.4	44.6	41.8
Total	88.2	78.3	78.0	72.9	61.7

saw or asking questions) or imaginative play inspired by educational media; more than 78% of parents note that their child did so "sometimes" or "often." Nearly 73% of children teach their parent something new based on something they learned from educational media. Requesting to do a project inspired by educational media happens less frequently, but a remarkable 62% of Hispanic-Latino children still do so. See Insert 1 for an example from an ethnographic study of media use in Hispanic families carried out as part of the Joan Ganz Cooney Center Families and Media project.[ii]

Interestingly (and perhaps not surprisingly), the use of media to catalyze other activities is positively and consistently related to the use of educational media across all platforms except for TV (see Table 8). Therefore, regularity of educational content use across almost all platforms was linked to greater use of media as a springboard for other activities. Perhaps more important, this implies that a range of media platforms have the potential to spur interesting non-media activities and conversations, and that such activities are not limited to a few or a single medium.
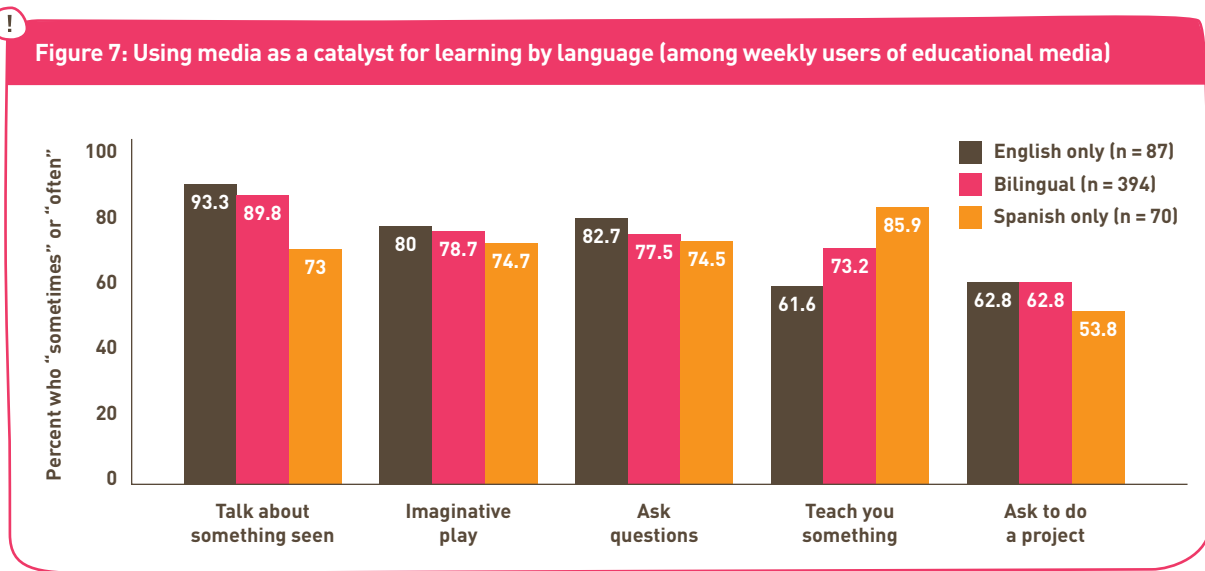
Language groups

There are few differences in the use of media as a catalyst for learning for the three language groups (see Fig. 7), suggesting that media can

Table 8: Pearson correlation coefficients (r) among using media as a catalyst for learning and use of educational media on different platforms

	Using media as a catalyst for learning	n
Frequency of educational content use		
TV	.02	550
Online video	.15**	550
Video games	.26**	549
Mobile devices	.14**	551
Computer games	.21**	544
Non-game computer activities	.19**	550

** p < .01

Note: A scale averaging the five "media as catalyst" variables was created (Cronbach's alpha = .82) and correlation coefficients were estimated against the frequency of use of television, online videos, video games, mobile devices, computer games, and non-game computer activities (coded on an 8-point scale, with "1" = never and "8" = several times a day).

Figure 7: Using media as a catalyst for learning by language (among weekly users of educational media)

Legend:
- English only (n = 87)
- Bilingual (n = 394)
- Spanish only (n = 70)

Y-axis: Percent who "sometimes" or "often"

Category	English only	Bilingual	Spanish only
Talk about something seen	93.3	89.8	73
Imaginative play	80	78.7	74.7
Ask questions	82.7	77.5	74.5
Teach you something	61.6	73.2	85.9
Ask to do a project	62.8	62.8	53.8

be a resource for conversation and play for all children. In all three groups, parents are just about as likely to report that their child talks about media, engages in imaginative play, asks questions, and requests to do projects. The only difference is that English-only parents are less likely to report that their children teach them something they didn't know based on something they saw on educational media, compared to bilingual or Spanish speaking parents. This is consistent with research that describes the media-brokering roles that children in immigrant Latino families play. Children in families where parents have limited proficiency in the majority language often broker media activities (e.g., learning to use new technologies, as well as traditional forms of communication such as the phone and mailed items) as an integral part of their daily lives (Katz, 2010, 2014), thus conveying new information to their parents on a regular basis. In Insert 2 we provide an example from the ethnographic studies, in this case a child teaching a grandparent.

Parents' own use of technology for learning

Parents' own technology use can be an important element in engaging with their child around media. Parents who are more comfortable with technology tools are in a better position to support their child's learning on different platforms. Parents were asked how often they "personally

Insert 1: Media sparks new projects

Alicia is a 9-year-old girl of Ecuadorian descent, who is quite engaged with her dolls. However, playing with dolls is not enough; Alicia often builds and creates accessories for her toys. Alicia gets her inspiration from YouTube. Her mother, Elena, notes that, "Yeah, she goes into the YouTube and she just watches all the videos to learn how to do [the] bed, drapes, clothes, closet, everything. There's a lot of things in YouTube about these things to do for the dolls, for the little dolls." Alicia is known to grab materials from all over the apartment, such as paper, scissors, and glue to build these doll accessories. She invites her mother to make these accessories and watch the videos. Although it can get messy in the home with all the materials spread everywhere, Alicia spends a lot of time on the weekends making and crafting these doll accessories. Watching educational videos online (which Elena puts on) is a weekly practice for Alicia, as is doing educational non-game activities on the computer. Other educational media use (e.g., TV/DVDs, video games, or computer games) happens rarely or not at all. Alicia lives in a media-rich home, with multiple TVs, cable access, a DVD player, multiple smart-phones, a tablet, high-speed Internet, and computers. Elena herself uses the Internet to look up information several times a day.

Insert 2: Child teaches grandparent something new

Addy lives in northeast New Jersey. She is an 8-year-old girl of Puerto Rican and Italian descent who would prefer hide-and-seek and roller-skating to TV any day. However, she is still surrounded by technology (including smartphones, tablets, computers, handheld game players, and high-speed Internet access), which helps to keep her connected to family members. The family speaks both English and Spanish at home. After her parents divorced, Addy's mother arranged for Addy to stay with her grandmother, who lives much closer to her school during the week. Therefore, Addy does not see her mom—who also has three jobs—much on weekdays, and wishes to talk to her and see her face. While Addy's grandmother claims that she does not have an ounce of tech-savviness, she and Addy work very hard together to learn how to use FaceTime so that she can talk to her mom. Addy's grandmother cannot believe how easily young children can maneuver such complicated technology, and although she often feels like she does not have the skillset to use it, she will try if it means making her grandchildren happy! Addy's family values education and her mother thinks that technology is necessary for children to learn 21st century skills.

use a computer, the Internet, or mobile device to look up information or learn something new" (such as "look up a recipe, get health information, learn a language, take a class, do brain-training exercises, or find the answer to a question"). Hispanic-Latino parents often use technology (the computer, Internet, or mobile device) to find out information or learn something new. Almost half (44%) use a computer, the Internet, or a mobile device to learn something at least daily. Almost three-quarters do so at least weekly.

Parents' Internet use is differentiated based on their access to technology. Figure 8 shows the percent of parents who report use at least once a day, based on their in-home access to high-speed Internet, a tablet, and smartphone. Across all devices, parents who have home access are significantly more likely to use technology for learning than those without home access.[9] Figure 8 shows that almost twice as many parents are daily learners if they have home access to computing tools including high-speed Internet, tablets, or smartphones. Insert 3 describes a parent learning from online videos so that she can help her daughter learn about fractions.

Parents' use of technology is in turn related to how regularly their child uses educational media (see Table 9), suggesting that parents' access to and

Insert 3: Parents learn important information from the Internet

Alicia (also described in Insert 1) is a 9-year-old girl of Ecuadorian descent who often gets frustrated with her math homework. For example, Alicia has difficulty putting fractions in order from least to greatest (e.g., ¼, ⅓, ½). Her mom, Elena, wants to help her out, but also does not know the math well enough. However, Elena is resourceful and uses YouTube: "Yeah, when she (Alicia) doesn't know something, I go to YouTube, I see the video. And once I understand how it is, then I'll teach her. I explain it to her." If one video is not helpful, Elena switches to another until she understands the concept, "So then after I finish watching the video, then I explain it to her. And if I didn't understand, or she doesn't get it, then we'll see the video again. And we do samples." Although the process of solving the math problems can be different on the videos than how the teacher explains it, Elena reminds Alicia, "People do them (math problems) in different ways, but you'll get the same answer." Elena is also using Google to search definitions of vocabulary words that she and Alicia do not know. She is looking for educational apps for Alicia but confesses that she does not know what to look for. Their use of educational content is largely focused on using YouTube for homework.

Table 9: Pearson correlation coefficients (r) among parents' use of technology for learning and children's use of educational media.

	Parents use of technology for learning	n
Frequency of educational content use		
TV	.13**	677
Online video	.31**	676
Video games	.08**	676
Mobile devices	.29**	678
Computer games	.24**	671
Non-game computer activities	.31**	677

** p < .01

Note: The frequency of parents' use of technology for learning, and child's educational media use were both coded on an 8-point scale, with "1" = never and "8" = several times a day. Frequencies are calculated among those with valid data, including those who do not use educational media on the given platform.

[9] Differences in parents' daily Internet use for learning are significantly different based on their access to mobile and Internet tools: high-speed Internet [χ^2 (1, N = 669) = 53.94, p < .001], tablets [χ^2 (1, N = 678) = 64.35, p < .001], smartphones [χ^2 (1, N = 677) = 34.18, p < .001],

familiarity with technology may be consequential for their child's use of educational content across media platforms, and especially for computer-related activities (game and non-game), online videos, and mobile devices. Both are, of course, associated with access, and it is possible that access is ultimately driving both parents' and children's use. Enthusiasm or valuing of technology may also contribute to variability in the uptake of technologies and more research is needed really understand these patterns. Insert 4 illustrates how a parent and child use technology together to nurture the child's interest in history and other topics.

Language groups

Some important differences by language group surface in parents' use of technology (see Fig. 9). Parents in Spanish-only families are less likely to use technology for learning on a daily basis, but 40% use technology on a weekly basis. Bilingual and English-only households do not differ in this regard.

These differences likely reflect differences in access to technologies. Among the three language groups, Spanish-only families have the least access to high-speed Internet, computers, and tablets (see Fig. 3 earlier in the report). Most of the respondents in Spanish-only families are mothers

Figure 8: Percent of parents who report at least daily use of the Internet for their own learning, by access to technology
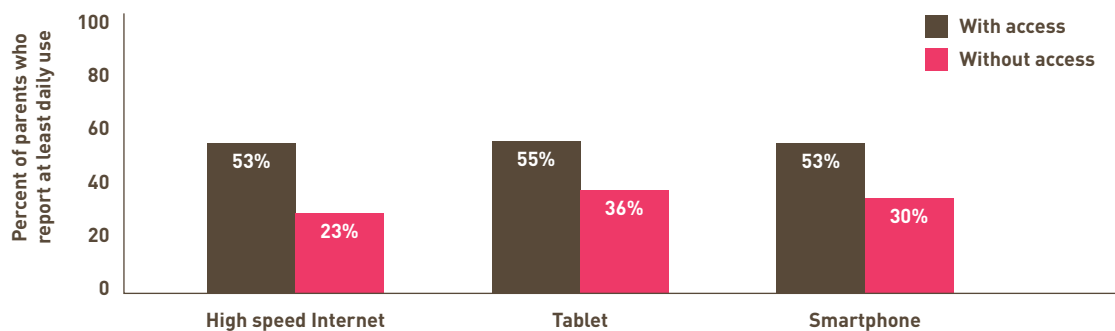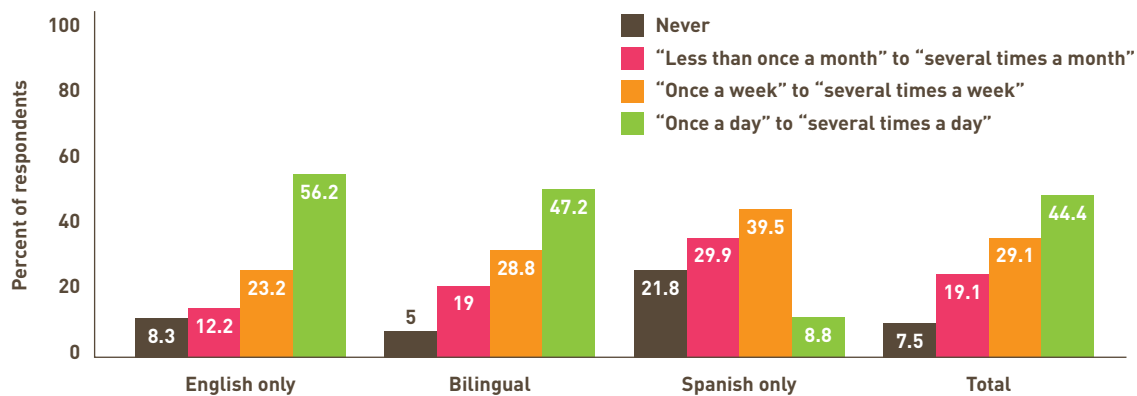

Figure 9: Parents' use of the Internet for learning by language

(78%, compared with 58% in bilingual homes, and 68% in English-only homes); it is possible that they stay home full-time as caretakers for their children (while their husbands work) and thus have limited access to technologies that they do not already own at home. Income and education are also confounded with employment; parents in the Spanish-only group may be employed in sectors of the economy that do not require technology use and are thus less likely to have technology access at work.

Joint media engagement

Parents reported whether their child had watched TV, used a computer, played a video game or used a mobile device like a tablet or smart phone the day prior to the survey. They also indicated whether they or their co-parent used the device with the child, what we call "joint media engagement" (JME). If they did co-engage, they reported the amount of time they did so. These data are provided in Figure 10. (Subsample D in the Appendix shows the number of parents who report that their child used each of the four platforms the previous day.) Though many children watched TV, fewer used the other devices. However, many of those who use the devices do so with a parent and for a substantial amount of time.

All parents were also asked for a more global assessment of the amount of time they spend co-engaged with their child in a typical week,

Insert 4: Media as a catalyst for interest-driven learning

Brandon is an active 6-year-old boy who loves to play outside as well as play video and board games, especially ones related to sports and superheroes. Brandon's parents each immigrated to California from El Salvador a few years before he was born; his mother works in a fast food restaurant, and his father works nights at a discount grocery. Both parents speak only Spanish at home. Brandon too primarily speaks Spanish, although his parents report that he understands and speaks some English as well, based on observing him at school. Brandon also had begun to demonstrate a keen interest in history, and often asks his parents detailed questions about historical figures that he is learning about at school. Brandon's father, José Rubén, does not know many of the answers that Brandon seeks, so the two turn to YouTube as a way of learning more about leaders such as Martin Luther King, Jr., George Washington, and Cesar Chavez, taking advantage of the information available, the visual nature of the material, and in the case of historical figures, the opportu-

nity to see and hear people from the past. School was not the only source of interesting topics, José Rubén also describes a time when Brandon's questions were sparked by watching media. While viewing one of the Disney Ice Age movies, Brandon asked, "Dice 'Papi, ¿en esa época cómo era, que no había buses, no había...?' entonces vemos documentales donde aparecen y todo." ["He said 'Dad, at that time what was it like, there weren't any buses, there weren't...?,' so we watched documentaries where it's shown and everything"]. Though José Rubén and Brandon began exploring YouTube videos to learn about history-related topics, they expanded this to explore other interests as well, including dinosaur species and other animals. Using the Internet as a learning resource is a daily practice for Brandon's father and he reported using it several times as day to find information. This is supported by several home devices including a smartphone, TV, cable, Wi-Fi, educational laptop toy, handheld game device, desktop computer, and laptop computer.

across all devices. As shown in Table 10, these parents estimate a substantial amount of time in JME each week—half the sample report 2 to 10 hours of JME (see Table 10).
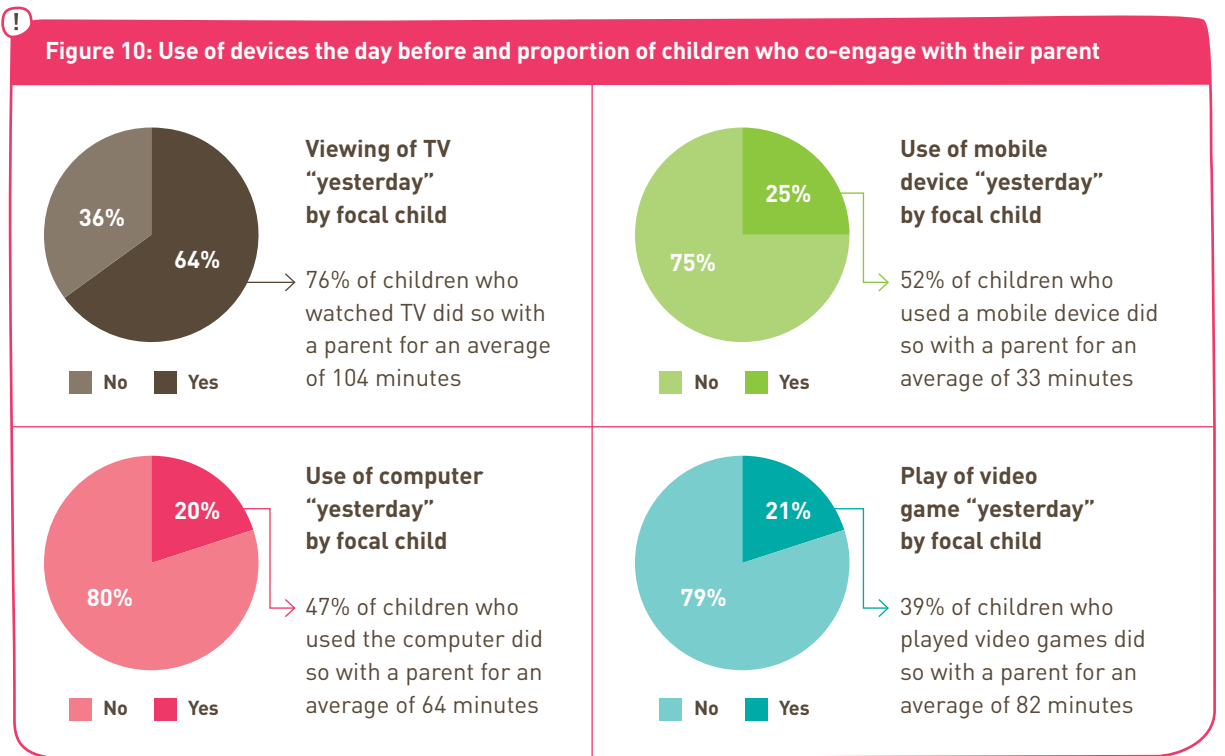
Language groups
Figure 11 shows the amount of JME time averaged across users of each platform. (It is important to note that these figures reflect the amount of JME time averaged across all children who used the platform the day before. This includes children who did not engage in JME, for whom 0 minutes is recorded. Figure 10 provides the average amount of time for those parent-child pairs who did co-engage around each device.). Television is overwhelmingly the primary medium around

Table 10: Amount of time spent in JME with child per week

	Total sample	English only	Bilingual	Spanish only
Over 15 hours a week	7.6	6.9	8.1	5.7
Between 10-15 hours a week	13.5	19.0	12.4	14.2
Between 5-10 hours a week	24.6	26.4	24.3	28.7
Between 2-5 hours a week	26.0	13.5	26.9	33.6
Between 0-2hours a week	27.8	34.2	28.3	17.8

Figure 10: Use of devices the day before and proportion of children who co-engage with their parent

Viewing of TV "yesterday" by focal child

36% 64% No Yes

76% of children who watched TV did so with a parent for an average of 104 minutes

Use of mobile device "yesterday" by focal child

25% 75% No Yes

52% of children who used a mobile device did so with a parent for an average of 33 minutes

Use of computer "yesterday" by focal child

20% 80% No Yes

47% of children who used the computer did so with a parent for an average of 64 minutes

Play of video game "yesterday" by focal child

21% 79% No Yes

39% of children who played video games did so with a parent for an average of 82 minutes
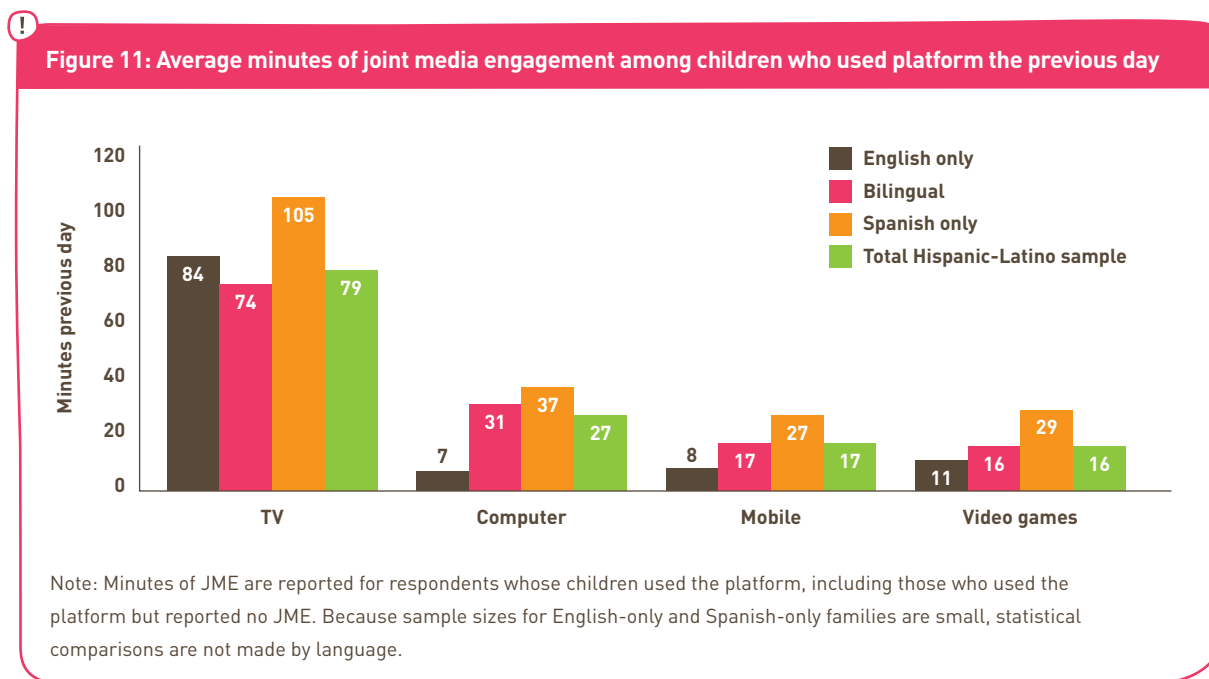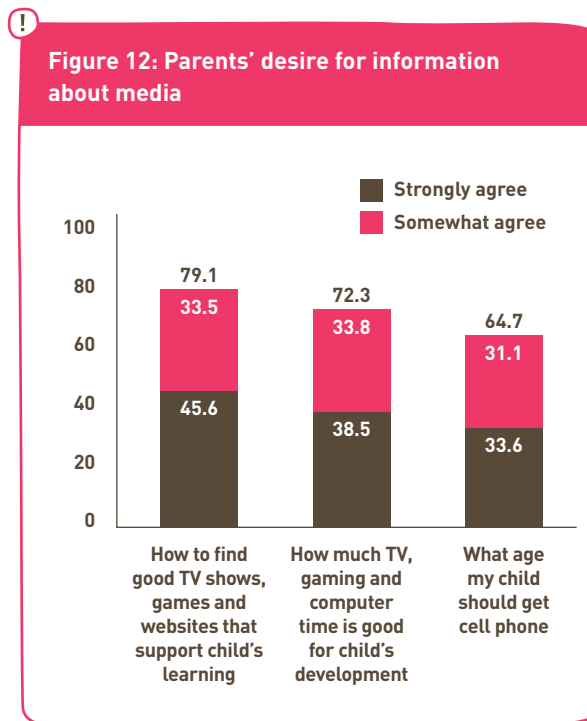
which most joint media engagement among Hispanic-Latino families takes place: Parents whose child watched TV spent an average of 79 minutes watching television with their child (see Fig. 11). Joint use on other platforms—video games, computer, and mobile devices—is less, from16 to 27 minutes.

Though sample sizes are too small to make statistical comparisons, the data suggest that parent respondents from Spanish-only homes spend the most time in joint media engagement among the three groups (see Fig. 11). Global estimates of weekly time spent in JME do not differ substantially by home language (see Table 10).

Parents' desire for information about media

Hispanic-Latino parents express a strong desire for more information about media. Almost 80% of parents agree or strongly agree that they want information on content—how to find good shows, games, and websites that support their child's learning. Slightly fewer (though still a substantial portion at 72%) parents agree or strongly agree that they would like information about time —how much media time is good for children's development. Parents are also interested in what

age their child should get a cell phone (see Fig. 12), but to a slightly lesser degree than information about media content and time. Interestingly, for all three areas, child age was not related to whether parents wanted more information.

Figure 12: Parents' desire for information about media

Legend:
- Strongly agree
- Somewhat agree

Category	Somewhat agree	Strongly agree	Total
How to find good TV shows, games and websites that support child's learning	33.5	45.6	79.1
How much TV, gaming and computer time is good for child's development	33.8	38.5	72.3
What age my child should get cell phone	31.1	33.6	64.7

Figure 11: Average minutes of joint media engagement among children who used platform the previous day

Minutes previous day

Legend:
- English only
- Bilingual
- Spanish only
- Total Hispanic-Latino sample

Platform	English only	Bilingual	Spanish only	Total Hispanic-Latino sample
TV	84	74	105	79
Computer	7	31	37	27
Mobile	8	17	27	17
Video games	11	16	29	16

Note: Minutes of JME are reported for respondents whose children used the platform, including those who used the platform but reported no JME. Because sample sizes for English-only and Spanish-only families are small, statistical comparisons are not made by language.

Hispanic-Latino parents are consistently more likely to want information about media compared to non-Hispanic White and Black parents (see Fig. 13). This may suggest that this information is simply less readily available, or that media play a more central role in family life for Hispanic-Latino households.

In thinking about the best ways to get information to parents, schools and parents' social networks may be especially salient. In a question that asks where parents find information about educational media for their child, friends and family (mentioned by 42% of parents) and teachers (mentioned by 31% of parents) emerge as the two primary sources of information.

Language groups
Among the three language groups, parents who speak only Spanish are most likely to express a desire for information about media (see Fig. 14). Almost all of them want information about media content, time, and the appropriate age for cell phone use. It is possible that these families have more limited access to information and resources on children and media than other families because most of these resources are available only in English and largely on online platforms (websites, blogs, or social media). It's also likely that Spanish-only families see media as an additional, important educational resource for their children and thus want to know more about it. More bilingual parents also wanted information about media than English-only parents.

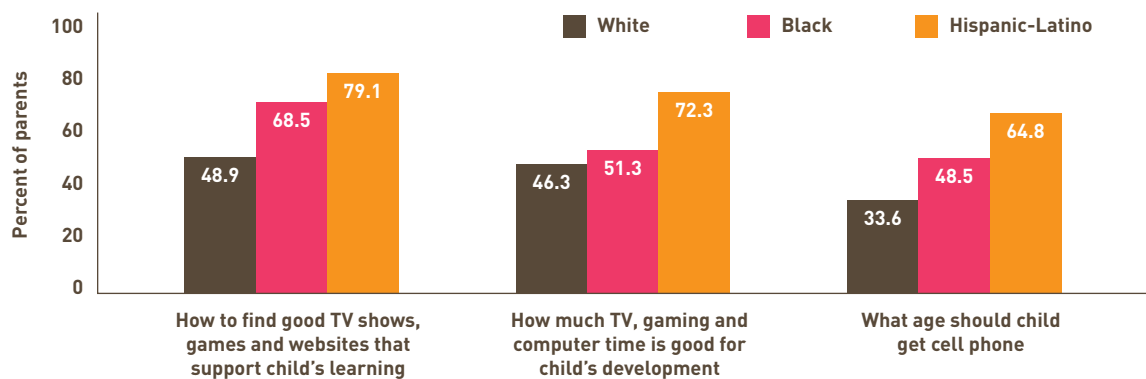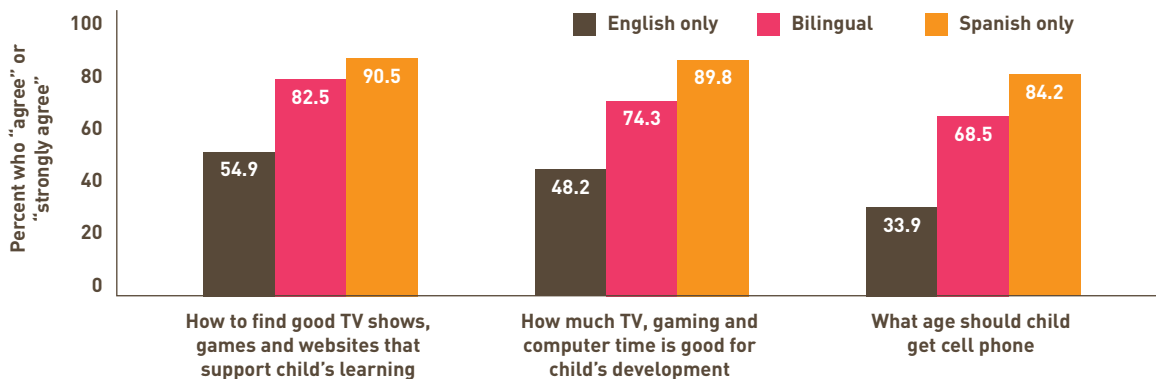**Figure 13: Parents' desire for information about media by ethnicity**

Legend: White, Black, Hispanic-Latino

Percent of parents

How to find good TV shows, games and websites that support child's learning: White 48.9, Black 68.5, Hispanic-Latino 79.1

How much TV, gaming and computer time is good for child's development: White 46.3, Black 51.3, Hispanic-Latino 72.3

What age should child get cell phone: White 33.6, Black 48.5, Hispanic-Latino 64.8

Figure 14: Parents' desire for information about media by language

Legend: English only, Bilingual, Spanish only

Percent who "agree" or "strongly agree"

How to find good TV shows, games and websites that support child's learning: English only 54.9, Bilingual 82.5, Spanish only 90.5

How much TV, gaming and computer time is good for child's development: English only 48.2, Bilingual 74.3, Spanish only 89.8

What age should child get cell phone: English only 33.9, Bilingual 68.5, Spanish only 84.2

implications

The survey has uncovered important findings about media use in Hispanic-Latino families in America. While there are differences between Hispanic-Latino families and other groups with respect to access to technologies, there is also significant diversity within the Hispanic population. Underscoring the diversity of families' experiences was a key goal of this report. We compared groups by home language use, which is only one dimension of diversity among Hispanic-Latino families. Many more sources of variation (e.g., country of origin, generational status, education, employment, and a host of other facets) are confounded with language in this sample and need to be examined. These analyses set the stage for further investigation of the role that educational media play in these families. The following are reflections on the implications of these findings for researchers, media designers, and practitioners.

For family educators and practitioners

Digital technologies have become increasingly important for learning and information seeking. **Expanding access** is crucial for parents' and children's capabilities to fully engage in the advantages that these technologies bring. As publicly supported institutions, community resources such as libraries, schools, and after-school programs have a special role to play in providing such access. Outreach initiatives created in partnership with organizations serving Hispanic-Latino families are especially critical. More limited access to technology also restricts the kinds of information at families' fingertips. It is crucial to **provide resources in formats other than digital**. Print, DVD, TV, and radio remain important avenues to reach low-resource and Spanish-only families.

In addition to informational and technical resources, **new approaches to parent education** are needed to showcase how to use digital media to advance their children's learning and interest development as well as help identify high quality content. Models of family workshops are also needed. In many Hispanic-Latino families—particularly Spanish-dominant homes—children can play a unique role in **brokering information and resources for their parents**. Supporting co-learning can benefit both parents and children.

Finally, there is a clear need for **more Spanish-language informational resources about media**. Understanding how to choose good media content and managing their child's screen time is important to most Hispanic-Latino parents. While resources exist in English, much less is available in Spanish. Where resources are available, families may not know that they exist. Raising awareness about the availability of such information will be very helpful to parents. In addition, new research and data about media, children, and families are released continually, but non-research audiences may have difficulty interpreting the findings or understanding what it means for their own media use. That research studies sometimes contradict one another only adds to the confusing array of information parents may encounter. A repository of research findings about media that can also help parents interpret the findings in their primary language will be a great service to families. A related consideration is sources of information that parents trust. Research may not be convincing for all parents. Teachers, family and friends are the main ways in which Hispanic-Latino parents find information about educational media. Thus, preschool providers or schools, as well as social networks, may prove to be important conduits for information.

For media designers and producers

Findings in this report point to the need for more content that serves diverse audiences, and **more mobile content that serves Hispanic-Latino families**. There is evidence that some families are increasingly using mobile devices rather than computers to access the Internet. Most mobile content is entertainment—rather than learning—focused; there is a need for more educational content produced on this platform for non-English-speaking audiences. In addition, producers can adapt current offerings of English-language apps and websites into Spanish and other languages, thus expanding the range of content that is available for families. Media also play an important role in English-language learning in bilingual and Spanish-only families. Many families can also benefit from more content deliberately designed to support English-language learning for both children and parents.

While mobile digital learning technologies have been the focus of new content development in recent years, it is important to keep in mind that these technologies do not yet reach many Hispanic-Latino children. TV continues to be an important learning resource for Hispanic-Latino families, which speaks to the need to **continue to create strong educational content on television, particularly with children in bilingual or Spanish-speaking families in mind**.

Parents' use of technology is linked to their child's media use in important ways. The findings suggest that parents' access to and familiarity with technology may affect their child's use of educational content, particularly on computers and mobile devices. Conversely, limits to parents' access may constrain children's ability to benefit from educational media. **An intergenerational approach to media design**, which considers children, parents, and possibly grandparents, is an important need that surfaces from this research.

Media often catalyze interesting and important activities for children. There is value for both parents and children in **media content that spark children's interests and encourages them to engage in conversations and other activities** based on what they saw or played. Several television shows have attempted to bring children's onscreen engagement off-screen (e.g., Reading Rainbow, Blues Clues, and Sid the Science Kid) and some apps are encouraging interactive play and learning (e.g., Toca Boca, Toontastic, and Kindoma), but there is a need for more content that moves them from screen to life. Creating content for JME typically focuses on the child, but parents' interests are a key consideration as well. Themes that interest both parent and child (e.g., cooking) will be especially effective for eliciting JME. The portable nature of mobile devices creates new opportunities to move media engagement to non-media activities, and intentional design-based research will further expand this potential.

The survey also suggests that JME happens infrequently on non-TV platforms. This could be an artifact of the timing of the survey—the study was conducted in summer, when less media use and co-engagement may occur in families as children are involved in other activities. Other research, however, has also found little joint media use in families despite its potential benefits (Clark, 2013; Fuller, Lizárraga, & Gray; in press). In this study, we found that JME rarely occurs but is sustained when it does, thus making the case for **creating more content that promotes JME** (see Takeuchi & Stevens, 2011, for a design guide).

For researchers

Media—with their many manifestations, platforms, and points of access—have become central to the lives of most parents and young children. This study underscores the need to pursue a research agenda that takes into account the unique circumstances and diversity among Hispanic-Latino families. **A range of methodologies and research approaches** is needed to fully understand ways in which Hispanic-Latino families engage around media and to document the potential for media to support learning. There are important roles for design experiments, randomized controlled trials, and ethnographic studies. Media research has a long, rich tradition, but has focused primarily on middle-class, majority-culture families. The next step is not only understanding Hispanic-Latino and other minority families in their own right, but along a spectrum of family conditions, media environments, and activities. Research is also needed that **engages families as design partners**. Parents perceive benefits of technology for learning English, literacy development, and to a lesser extent math and science. They also use networked resources for their own learning. Design research can advance the development of better tools that are tailored to families' needs and preferences.

The findings on **JME** perhaps raise more questions than answers. These include understanding what motivates or prevents JME; why it is so rarely reported; the nature of the engagement; how JME shapes or is shaped by family processes and parenting practices; and its implications for children's learning and well-being. Understanding the forms and functions of JME would help designers to recognize its value and integrate more meaningful supports for joint interaction in media products. The findings on JME may also be an artifact of method: JME often happens spontaneously and may not be easy for parents to recall in a survey, or they may think that instances of JME may be too insignificant to report (especially if the instances are brief), whereas researchers would consider them important. The majority of parents did report that children frequently asked questions or started conversations based on media. These are in fact expressions of JME, even though

parents may not have been directly co-engaging around the media that led to them. Further, researchers also **need a better understanding of the JME experience when language is implicated**, such as how JME occurs when parent and child are both English-language learners, or when one child is more fluent than the parent in English when they are using media in English.

These results call for new research that investigates **how to design media that spark interest, conversation, questions, and play**. Understanding how these forms of engagement are related to learning outcomes is also important and suggests the need for research that can **track the evolution of media-supported learning over sustained periods of time and across settings** (Barron & Bell, in press). For example, an important question is whether the "pathways" to using educational media in the home translate to the types and content of media used in other contexts—in schools or community environments. Teachers and practitioners in community organizations potentially play an important role in creating linkages and supports for Hispanic-Latino families in using media for learning. Research that bridges these contexts would provide valuable information for parents, educators, and practitioners to create or strengthen media pathways for learning.

references

Barron, B & Bell, P. (in press). Learning in informal and formal environments. In L. Corno &
   E. Anderman (Eds.), *Handbook of Educational Psychology: 3rd Edition*. Mahwah, NJ: Erlbaum.

Barron, B., Levinson, A., & Matthews, J. (2013, April). Parent and child interests as drivers of joint
   media engagement. In A. Levinson (Chair), *Joint media engagement: Diverse perspectives on how
   young children, families and teachers learn and interact with media together*. Symposium conducted
   at the Annual Meeting of the AERA, San Francisco, CA.

Barron, B., Martin, C. K., Takeuchi, L., & Fithian, R. (2009). Parents as learning partners in the
   development of technological fluency. *International Journal of Learning and Media*, 1(2), 55-77.

Barron, B., Mertl, V., & Martin, C. K. (2014). Appropriating the process: Creative production within
   informal interactions and across settings. In B. Barron, K. Gomez, N. Pinkard, & C. K. Martin,
   The Digital Youth Network: Cultivating new media citizenship in urban communities (pp. 167-190).
   Boston, MA: MIT Press.

Carlson, S.M., & Meltzoff, A.N. (2008) Bilingual experience and executive functioning in young
   children. *Developmental Science*, 11, 282–298.

Chiong, C., & Shuler, C. (2010). *Learning: Is there an app for that? Investigations of young children's
   usage and learning with mobile devices and apps*. New York: The Joan Ganz Cooney Center at
   Sesame Workshop. Retrieved from http://www.joanganzcooneycenter.org/publication/
   learning-is-there-an-app-for-that/

Clark, L. S. (2013). *The parent app: Understanding families in a digital age*. New York: Oxford University Press.

Collins, W.A., Sobol, B.L., & Westby, S. (1981). Effects of adult commentary on children's
   comprehension and influences about a televised aggressive portrayal. *Child Development,
   52*, 158-163.

Common Sense Media. (2011). *Zero to eight: Children's media use in America*. Retrieved from
   https://www.commonsensemedia.org/research/zero-to-eight-childrens-media-use-in-america

Common Sense Media. (2013). *Zero to eight: Children's media use in America 2013*. Retrieved from
   https://www.commonsensemedia.org/research/zero-to-eight-childrens-media-use-in-
   america-2013

Cook, T. D., Appleton, H., Conner, R. F., Shaffer, A., Tamkin, G., & Weber, S. (1975). *Sesame Street
   revisited*. New York: Russell Sage Foundation.

Crowley, K. & Jacobs, M. (2002). Islands of expertise and the development of family scientific
   literacy. In G. Leinhardt, K. Crowley, & K. Knutson (Eds.), *Learning conversations in museums*.
   Mahwah, NJ: Lawrence Erlbaum Associates.

Dyson, A. H. (1997). *Writing superheroes: Contemporary childhood, popular culture, and classroom literacy*.
   Williston, VT: Teachers College Press.

Fender, J. G., Richert, R. A., Robb, M. B., & Wartella, E. (2010). Parent teaching focus and toddlers'
   learning from an infant DVD. *Infant and Child Development*, 19(6), 613-627.

Fuller, B. & Garcia-Coll, C. (2010). Learning from Latinos: Contexts, families, and child development
   in motion. *Developmental Psychology*, 46, 559-565.

Fuller, B., Lizárraga, J. R., & Gray, J. (2015). *Digital media and Latino families — New channels for learning,
   parenting, and local organizing*. New York: The Joan Ganz Cooney Center at Sesame Workshop.

Garcia, E., Jensen, B. & Scriber, K. (2009). The demographic imperative: Educating English
   language learners. *Educational Leadership*, 66, 9-13.

Hakuta, K. (2011 May). Educating language minority students and affirming their equal rights:
   Research and practical perspectives. *Educational Researcher*, 40 (4), 163-174.

Katz, V. S. (2010). How children of immigrants use media to connect their families to the
   community. *Journal of Children and Media*, 4, 298-315.

Katz, V. S. (2013) Vision Paper 3: Understanding Latino families on their own terms. In S. Vaala, *Aprendiendo Juntos (Learning Together): Synthesis of a cross-sectorial convening on Hispanic-Latino families and digital technologies*. Retrieved from http://www.joanganzcooneycenter.org/publication/aprendiendo-juntos/

Katz, V. S. (2014). *Kids in the middle: How children of immigrants negotiate community interactions for their families*. Rutgers, NJ: Rutgers University Press.

Kuhl, P. K. (2010). Brain mechanisms in early language acquisition. *Neuron*, 67(5), 713-727.

Lemish, D. & Rice. M. (1986). Television as a talking picturebook: a prop for language acquisition. *Journal of Child Language*, 13, 251-274.

Levinson, A. (2014). Tapping in: Latino family's home media practice. Unpublished Doctoral Dissertation. Palo Alto, CA: Stanford University.

Linebarger, D. L., Taylor-Piotrowski, J., & Vaala, S. (2007). *Supplementing television: What enhances or detracts from the power of television to teach*. University of Pennsylvania: Annenberg School for Communication.

Linebarger, D. L., & Walker, D. (2005). Infants' and toddlers' television viewing and language out comes. *American Behavioral Scientist*, 48, 624-645.

Livingston, G, (2011). *Latinos and Digital Technology, 2010*. Washington, DC: Pew Hispanic Center. Retrieved from http://pewhispanic.org/files/reports/134.pdf

Lopez, M. H., Gonzalez-Barrera, A., & Patten, E. (2013). *Closing the digital divide: Latinos and technology adoption*. Washington, DC: Pew Hispanic Center. Retrieved from http://www.pewhispanic.org/files/2013/03/Latinos_Social_Media_and_Mobile_Tech_03-2013_final.pdf

Moran, K. C. (2010). Parents' perceptions of preschool television: Exploring differences between Spanish- and English-speaking families. *Journal of Children and Media*, 4, 468-483.

Nathanson, A. I. (2001a). Parent child perspectives on the presence and meaning of parental television mediation. *Journal of Broadcasting & Electronic Media*, 45, 201-220.

Nathanson, A. I. (2001b). Parents versus peers: Exploring the significance of peer mediation of antisocial television. *Journal of Communication*, 28, 251-274.

Penuel, W. R., Bates, L., Pasnik, S., Townsend, E., Gallagher, L. P., Llorente, C., & Hupert, N. (2010). The impact of a media-rich science curriculum on low-income preschoolers' science talk at home. In K. Gomez, J. Radinsky, & L. Lyons (Eds.) *Proceedings of the 9th International Conference of the Learning Sciences* (Vol. 1, pp. 238-245). New Brunswick, NJ: ISLS.

Pew Hispanic Center. (2013). *Between two worlds: How young Latinos come of age in America*. (Updated edition.) Washington, DC: Pew Hispanic Center. (December 11, 2009).

Reardon, S.F. & C. Galindo. (2007). Patterns of Hispanic students' math skill proficiency in the early elementary grades. *Journal of Latinos and Education*, 6(3), 229-252.

Reiser, R.A., Tessmer, M.A., & Phelps, P.C. (1984). Adult-child interaction in children's learning from Sesame Street. *Educational Communication and Technology Journal*, 32, 217-223.

Reiser, R.A., Williamson, N., & Suzuki, K. (1988). Using "Sesame Street" to facilitate children's recognition of letters and numbers. *Educational Communication and Technology Journal*, 36, 15-21.

Rideout, V. (2014). *Learning at home: Families, educational media use in America*. A report of the Families and Media Project. New York: The Joan Ganz Cooney Center at Sesame Workshop. Retrieved from http://www.joanganzcooneycenter.org/publication/learning-at-home/

Schwartz, L. & Gutierrez, K. (Forthcoming in 2015). Literacy studies and situated methods: Exploring the social organization of household activity and family media use. In Rowsell, J. & Pahl K. Ed(s). *The Routledge Handbook of Literacy Studies*. New York: Routledge.

St. Peters, M., Huston, A. C., & Wright, J. C. (1989). *Television and families: Parental co-viewing and young children's language development, social behavior, and television processing*. Paper presented at the Society for Research in Child Development, Kansas City, KS.

Stevens, R., Headrick-Taylor, K., et al. (2014). Mapping the distribution of children's digital media practices: Methodological innovations and challenges. In Polman, J. L., Kyza, E. A., O'Neill, D. K., Tabak, I., Penuel, W. R., Jurow, A. S., O'Connor, K., Lee, T., and D'Amico, L. (Eds.). *Proceedings of the 11th International Conference of the Learning Sciences (ICLS 2014)* (Vol. 3, pp. 1264 – 1272). Mahwah, NJ: Erlbaum.

Stevens, R., & Penuel, W. R., (2010). *Studying and fostering learning through joint media engagement*. Paper presented at the Principal Investigators Meeting of the National Science Foundation's Science of Learning Centers, Arlington, VA.

Stevens, R., Satwicz, T., & McCarthy, L. (2008). In-game, in-room, in-world: Reconnecting video game play to the rest of kids' lives. In K. Salen (Ed.), *The ecology of games: Connecting youth, games, and learning* (pp. 41-66). Cambridge, MA: MIT Press.

Takeuchi, L. & Stevens, R. (2011). *The new co-viewing: Designing for learning through joint media engagement*. New York: The Joan Ganz Cooney Center at Sesame Workshop. Retrieved from http://www.joanganzcooneycenter.org/publication/the-new-co-viewing-designing-for-learning-through-joint-media-engagement/

Valdés, G. (1996). Con respeto: *Bridging the distances between culturally diverse families and schools*. New York: Teachers College Press.

Vaala, S. (2013). *Hispanic-Latino families and digital technologies*. New York: The Joan Ganz Cooney Center at Sesame Workshop. Retrieved from http://www.joanganzcooneycenter.org/wp-content/uploads/2013/04/jgcc_aprendiendo_juntos.pdf

Wartella, E., Kirkpatrick, E., Rideout, V., Lauricella, A. & Connell, S. (2014). *Revised Media, technology, and reading in Hispanic families: A national survey*. Retrieved from http://web5.soc.northwestern.edu/cmhd/wp-content/uploads/2014/08/NWU.MediaTechReading.Hispanic.FINAL2014.pdf

Washington, J. (2011, January 10). For minorities, new 'digital divide' seen. *Associated Press*. Retrieved from http://usatoday30.usatoday.com/tech/news/2011-01-10-minorities-online_N.htm

appendix

Table A: Breakdown of subsample sizes

	Total sample	English only	Bilingual	Spanish only
Total sample sizes	682	116	486	80
Subsample A Sample whose child ever used:				
TV/DVD	639 (93.6%)	114 (97.9%)	446 (91.8%)	79 (98.5%)
Computer	430 (63.0%)	74 (63.9%)	323 (66.5%)	32 (40.5%)
Video games	417 (61.1%)	83 (71.4%)	293 (60.3%)	41 (51.2%)
Mobile device	363 (53.3%)	68 (58.8%)	265 (54.5%)	30 (37.4%)
Subsample B Sample whose child ever used educational content on the following platforms:				
TV/DVD	608 (89.1%)	100 (86.4%)	432 (88.8%)	76 (94.6%)
Online video	431 (63.2%)	67 (57.7%)	327 (67.3%)	37 (45.9%)
Video games (console or handheld)	340 (49.9%)	66 (57.1%)	242 (49.9%)	32 (39.4%)
Mobile games	332 (48.6%)	59 (50.8%)	245 (50.3%)	28 (35.1%)
Computer game	390 (57.2%)	67 (58.0%)	292 (60.2%)	30 (37.8%)
Other computer activities	447 (65.5%)	75 (64.7%)	336 (69.2%)	36 (44.5%)
Subsample C Sample whose child used educational content at least weekly on the following platforms:				
TV/DVD	481 (70.5%)	80 (68.9%)	340 (70.0%)	61 (75.7%)
Online video	271 (39.8%)	36 (30.7%)	209 (43.0%)	27 (33.4%)
Video games (console or handheld)	182 (26.7%)	39 (33.6%)	118 (24.4%)	25 (30.9%)
Mobile games	230 (33.7%)	39 (34.0%)	164 (33.7%)	27 (33.5%)
Computer game	252 (37.0%)	39 (33.9%)	190 (39.2%)	22 (28.1%)
Other computer activities	286 (41.9%)	52 (44.6%)	209 (42.9%)	25 (31.9%)
Subsample D Sample whose child spent any time the day before using the following platforms:				
TV/DVD	439 (64.3%)	76 (65.5%)	314 (64.6%)	46 (57.9%)
Video games	143 (21.0%)	21 (17.7%)	110 (22.7%)	12 (15.4%)
Computer	137 (20.0%)	21 (18.4%)	109 (22.5%)	6 (7.6%)
Mobile device	169 (24.7%)	21 (17.8%)	123 (25.3%)	21 (26.4%)

Note: The percentages reported in Table A use the sample size within the language group as the base.

notes

[i]**The Spanish Language Base Weight**

From 2008 through 2010, as an augmentation to KnowledgePanel, Spanish language-specific panel members were recruited through a geographically targeted dual frame sample that was screened for Spanish-language dominant households. Generally, these are households in which members speak Spanish and completed the recruitment interview in Spanish. Eleven geographic regions covering approximately 95% of the national Latino population was screened. Each region had both high-and low-density Hispanic population areas. High-density areas were screened by using RDD methods, whereas low density areas were screened by using Hispanic surname listed samples. Two adjustments are incorporated in the Spanish language base weight.

1. **Selection proportional to the number of telephone landlines reaching the household**
   As part of the field data collection operation, information was collected on the number of separate telephone landlines in each eligible (Spanish-speaking) household. A multiple-line household's selection probability is down-weighted by the inverse of its number of landlines.

2. **Geographic frame balancing for RDD and listed surname samples**
   The recruitment sample frame has a given proportional distribution across 11 regions, each consisting of both a high and low Hispanic population density area (ranging from 0.3% density to 13.9%; average = 4.6%). This adjustment factor returns the recruited households by area to their correct relative proportion across the 22 geographic density areas.

In 2011, the above telephone recruitment method was replaced with a pure probability-based RDD sample targeting telephone exchanges that covered Hispanic population areas of 45% or greater density based on census block data. The Spanish-language base weight compensates for this RDD sample approach when combined with other Hispanic panel.

[ii] These studies were carried out in California, and New York. The cases from the New York area are a part of a larger study examining Hispanic-Latino families and their meaningful interactions around digital media. The larger study was comprised of families with at least one child ages 6 through 9. The families in the first three examples resided in the Northeast area of the U.S. (New York, Philadelphia, and New Jersey). Adapting Headrick-Taylor and Stevens' (2014) mixed methods protocol, the study focused on an eight-week ethnography for each family, utilizing interviews, observations, survey data, experience sampling through phone calls, and geographic information systems software to map mobility and social networks. The combination of these techniques allowed for deep understanding of how children's at-home and on-the-move media practices influence family interactions around learning and development. The Brandon case comes from a related mixed methods study (Levinson, 2014) that explored how seven low-income Hispanic-Latino immigrant families with young children use broadcast and digital media and what language and literacy experiences these media facilitated for both children and adults. Participating families resided in an urban area of Northern California, included at least one child between the ages of five and seven, and spoke Spanish as their primary home language. The study was comprised of six months of ethnography with each family, as well as survey data and an intervention wherein each family received a tablet computer (iPad) loaded with selected high-quality language- and literacy-related apps. This methodology afforded data on families' existing media ecologies and practices, as well as a glimpse of what might be if families were given access to a new device and content.

Support provided by

*About the Families and Media Project*

The Families and Media (FAM) Project aims to unearth the potential that media may have for enriching family learning and routines. To accomplish these aims, members of the FAM Research Consortium are conducting a series of studies that link large-scale data with in-depth illustrations. The goals of this research are to stimulate the national conversation around the ways families use digital media together; inform policy on digital equity, family engagement, healthy development and education reform; inspire design of media and media-based interventions and curricula; and create resources for parents and educators to increase the amount and quality of interactions around media.

The Families and Media Research Consortium

AARP
Arizona State University
The Joan Ganz Cooney Center
The LIFE Center
Northwestern School of Communications
Northwestern School of Education & Social Policy
Rutgers University
Sesame Workshop
Stanford University Graduate School of Education

Managing Editor: Catherine Jhee
Copy Editor: Kendra Rainey
Design: Jeff Jarvis
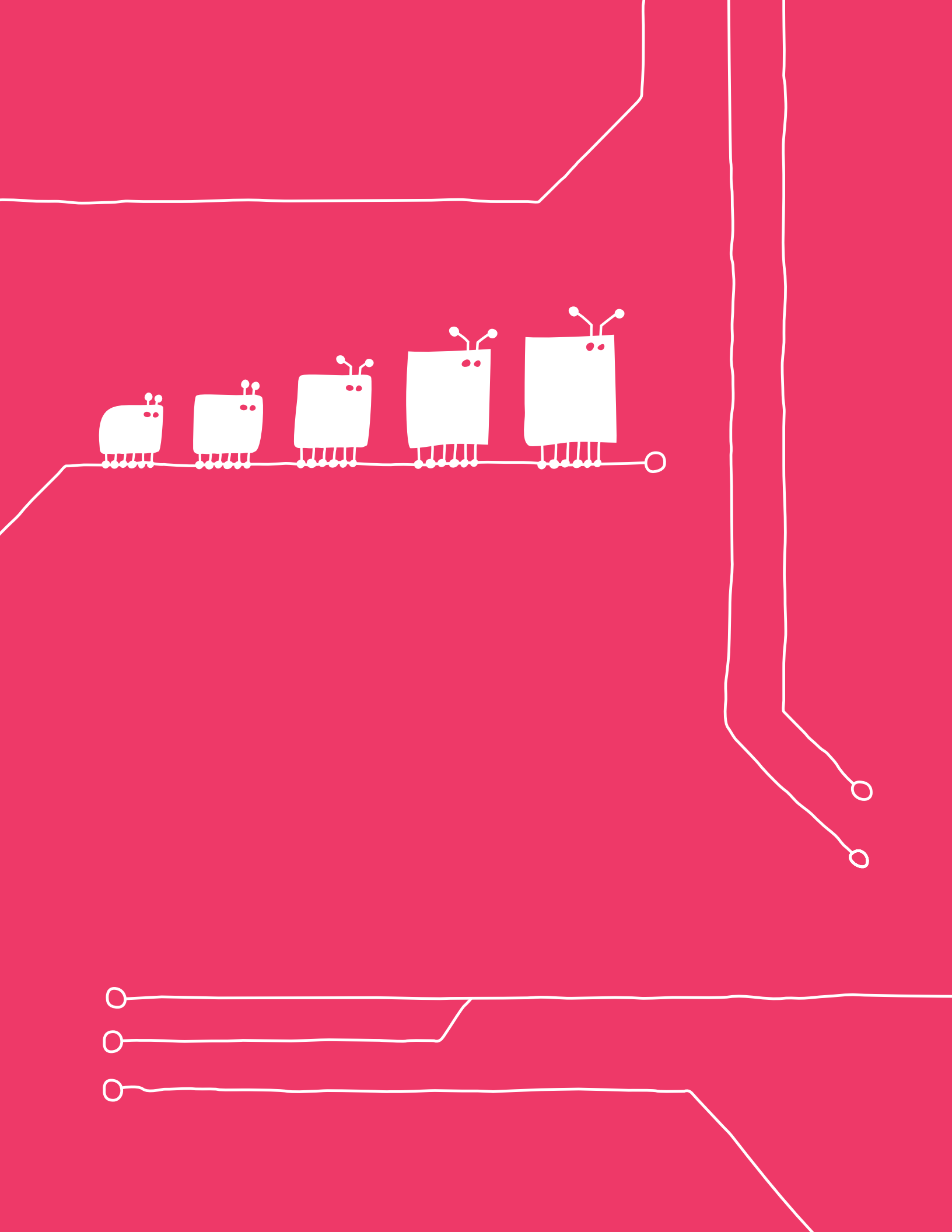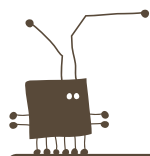
advancing
children's learning
in a digital age

the Joan Ganz Cooney Center
at Sesame Workshop

1900 Broadway
New York, NY 10023
p 212 595 3456
cooney.center@sesame.org
www.joanganzcooneycenter.org

sesameworkshop®