



Mind the Gap:

Improving Access to High Quality Digital Media

Page 2 – Introduction

Page 3 – Major Project Looks at Digital Access among Low-income Kids

Page 6 – Low-Income Programs, Schools Surveyed on Tech Use

Page 11 – Cost, Training Top Challenges for Low-Income Providers

Page 16 – Survey Highlights Use of Games Remains a DIY Affair

Growing evidence indicates that due to their high levels of engagement, adaptive/personalized nature, built-in assessment, availability in school and outside of school and ability to be played individually or together, digital games and other interactive tools hold great potential for learning. However, research also indicates that many of the tools that are richest in learning potential are not reaching underserved communities. Based on marketplace inefficiencies, the warp speed of change in the digital environment, and a need for stronger guidance from both parents and professionals, new divides in the quality of educational experiences for low-income households have emerged. Scholars such as Henry Jenkins and Susan Neuman have pointed to a “participation gap” in the types of experiences accessible to low and higher income youth.

“Mind the Gap” is an initiative of the Joan Ganz Cooney Center, in collaboration with First Book, the non-profit social enterprise that provides free and low-cost books and educational resources to schools and programs serving children in need. The initiative began in Spring 2015 as a means to evaluate access to digital tools among low income communities. The goal being to provide a research-based context to help the field better understand how to develop high quality, sustainable, marketable tools for underserved youth.

Based on previous work done by the Cooney Center around digital games in the classroom, the Cooney Center surveyed educators, program leaders and administrators of the First Book network on their access, needs and desires to digital tools in their classrooms and programs. The team then conducted a follow-up survey around the network’s use of digital games in their classrooms and programs.

The Cooney Center and First Book teams also met with a multi-disciplinary group of leaders and educators serving low income communities as well as digital content developers and distributors in a series of round table discussions.

Results of the surveys and the round table discussions were published on gamesandlearning.org. The following is a compilation of that reporting.

Major Project Looks at Digital Access among Low-income Kids

Originally published October 29, 2015

A major research project funded by the Susan Crown Exchange, headed by the Joan Ganz Cooney Center and done in coordination with First Book, a nonprofit organization that connects publishers and community organizations, will offer one of the first major assessments of the technology infrastructure and content needs of those groups looking to help low income and socio-economically disadvantaged kids. The survey of over 1,400 teachers and school administrators as well as out-of-school program directors and instructors highlights some of the needs and opportunities for those wanting to use games to engage and educate.

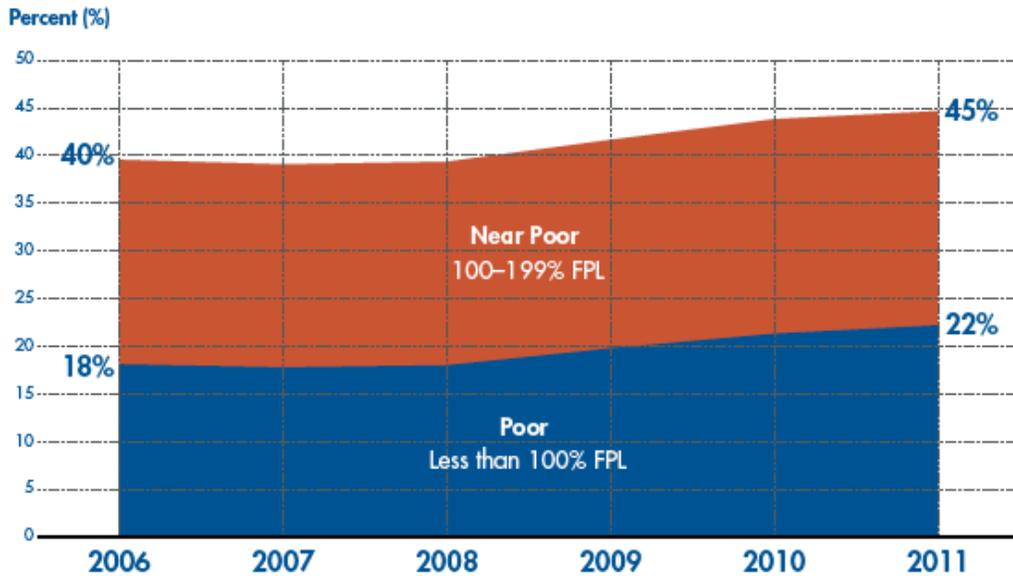
We will be diving into the numbers over the coming week, but wanted to step back and put the issue of low-income in context and offer some insights from some of those groups looking to build digital tools for lower-income communities and those running the out-of-school programs that serve many of those children.

Defining Low-income

Although the descriptions low-income and Title I get thrown around a lot, there is still some confusion about what the terms actually mean and how many students and young people are covered by this description. The low-income standard is set by the government each year and the National Center for Children in Poverty reported that a family of four, including two kids, with income of \$47,248 is considered low income. This income is approximately two times the federal poverty level.

That means of the nearly 72 million children in the United States, some 44 percent, or 31.8 million are considered low income. That number has grown slightly in the last 10 years. In 2006 some 40 percent of children lived at the low-income level.

Children living in low-income and poor families, 2006–2011



© National Center for Children in Poverty (www.nccp.org)
Basic Facts About Low-Income Children: Children Under 18 Years, 2011

Children of diverse backgrounds and in a broad range of living conditions fall into the low-income category, although statistics from the U.S. Census indicate there are factors that these income challenges do not fall equally across all groups. For example, African American, Latino and Native American children are all more likely to live in low-income households than White or Asian American kids.

Similarly, the educational achievements of the parents seem to play some role in the economic state of the family. Some 86 percent of children whose parents do not have a high school degree live in low-income families. That number drops to 67 percent for high school graduate parents and all the way to 31 percent for parents who have some college or more, regardless of racial background. Also, kids living with a single parent are much more likely to be living in low-income households with 52 percent of kids living with a single parent at low-income levels compared to only 18 percent of children in above low-income families live with a single parent.

Low-income Schools

Many of these lower-income students attend Title I schools. Title I is a provision of the federal Elementary and Secondary School Act that is aimed at helping schools in lower income areas. These schools often have less local tax revenue to run the public school programs and so Title I steps in with grants and programs that aim to help ensure students have access to as good a public school as students in wealthier areas, although inequalities have remained and, according to some experts only worsened as the digital divide grew on top of the traditional one.

“The twenty first-century situation for this huge population is terrible,” said Jane Robinson, chief financial officer at First Book. “As much as the educators are behind the eight ball in terms of print resources, they’re in even worse shape with digital media and the whole broad array of e-learning tools and this is creating a terrible, terrible gap between children in need and children of means.”

At last count some 56,000 schools used Title I funds to provide additional academic support and learning opportunities. These programs can include special preschool, after-school, and summer programs to extend and reinforce the regular school curriculum. Those programs served more than 21 million kids. Of these students, approximately 59 percent were in kindergarten through fifth grade, 21 percent in grades 6-8, 17 percent in grades 9-12, 3 percent in preschool, and less than one percent ungraded.

Despite these programs, questions remain as to how much students who come from poorer areas or face economic and social disadvantages have access to the technologies that could open up their education to personalized and game-based learning in and out of school.

Even as questions remain, some developers have seen this segment of the school population as a market where they can help the most children and perhaps do something most developers only dream of: build a product that works in both the school and consumer market.

“We are really, really committed to serving this audience selflessly. Selfishly, we know that if we want to build this eponymous brand between school and home, educators have to become a centerpiece of our brand. It is really worth the investment for us to work with educators to proliferate this among the schools. But if we do that, parents will follow. It’s hard for it us. It’s going to take a lot of investment – and in our heart of hearts we really believe that – but there is a massive commercial opportunity around that, that we need to unlock.”

– Neal Shenoy, CEO and Co-Founder of [Speakaboos](#)

This group of 32 million children and the 1.2 million teachers who serve them and the thousands of after-school programs that help them make up a unique market, though, says one of the largest out-of-school providers of programs to help low-income kids. Leah Gillam, director of the Mozilla Hive NYC Learning Network, stressed that those people who want to build the learning games and other digital assets that may help underserved communities need to be keenly aware of the challenges these communities face.

“I still really see a need for people who are developing tools, who are developing resources to really reach out and see what is happening around them and see how can we widen who’s using this tool, how can we be the kinds of people who we’re anticipating designing the tool for and then can we really diversify that experience,” Gilliam said this week.

To understand more about that community First Book and the Cooney Center commissioned a major survey of over 1,400 teachers, administrators and program directors around the country to see what their use of technology looks like and what kind of tools they are looking for. On Monday we will report on the state of technology access for these schools and afterschool programs. Next Thursday we will take a closer look at the barriers these programs and classrooms face and what a developer can do to best respond.

Low-Income Programs, Schools Surveyed on Tech Use

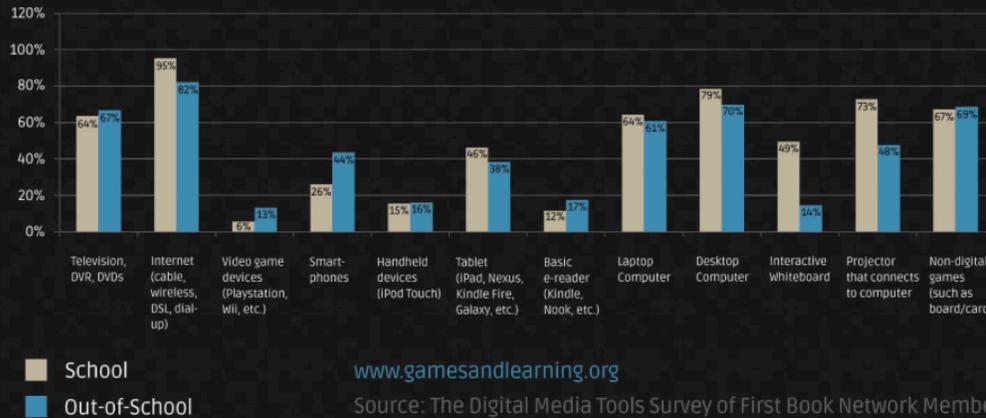
Originally published November 2, 2015

Nearly 32 million children are from low-income households in the United States. These kids are often served by schools that receive special Title I funding and after-school and summer programs aimed at giving them as good a shot in life as those from families of means. Research has also said these children, many of whom are at risk of not completing their education or having access to the necessary help to succeed, can be greatly helped by game-based learning and other digital tools.

The Joan Ganz Cooney Center surveyed more than 1,400 people who help these low-income kids. We heard from school teachers and administrators and out-of-school instructors and program directors to get a sense of what kind of technology they have and what kind of tools they need. The survey was of 200,000-person network of First Book, a non-profit literacy organization, and was made possible by the Susan Crown Exchange.

The results are an initial look at a far larger analysis of the state of video and other digital games in the classroom that will be released early next year.

I have access to this digital media tool in my class or program



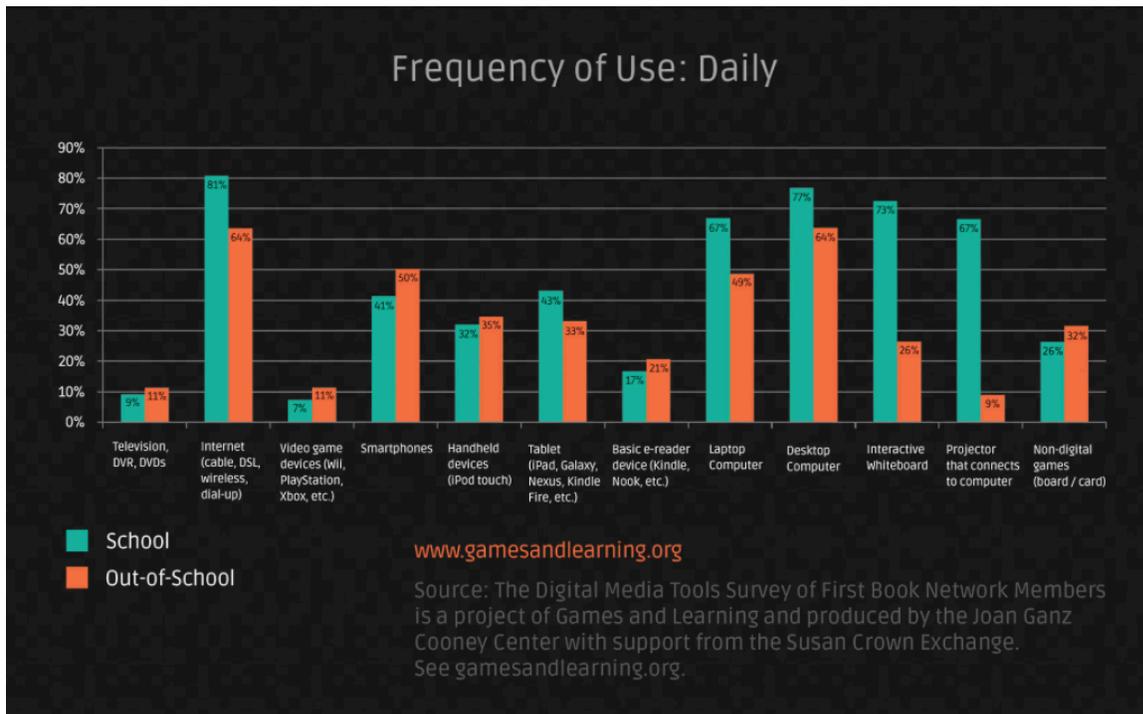
Source: The Digital Media Tools Survey of First Book Network Members is a project of Games and Learning and produced by the Joan Ganz Cooney Center with support from the Susan Crown Exchange. See gamesandlearning.org.

Increasing Access

The responses of more than 1,400 educators and program directors help shed some light on what kind of technologies and tools are currently available to lower-income students. Schools, for the most part, report more access to technology than most out-of-school programs. These established institutions, often bolstered by grants from federal and state governments, have been able to invest in some infrastructure and the results can be seen in this survey. A whopping 95 percent of schools report Internet access (although the speed and reliability of that connection remains varied) and a large majority of schools report access to computers (laptops: 64% and desktops: 79%) and projectors (73%).

Out-of-school program providers still report fairly good access to core technologies like the Internet (82%) and computers (laptops: 61% and desktops: 70%). In a handful of categories, these instructors reported actually having access to more technology like smartphones and e-readers than their formal education partners.

Often these core access issues vary based on where the program or school is located. As one respondent noted, "Internet access can be a challenge due to the rural areas that we serve. Families can't always afford to have access to the Internet and sometimes the reception is just not there."



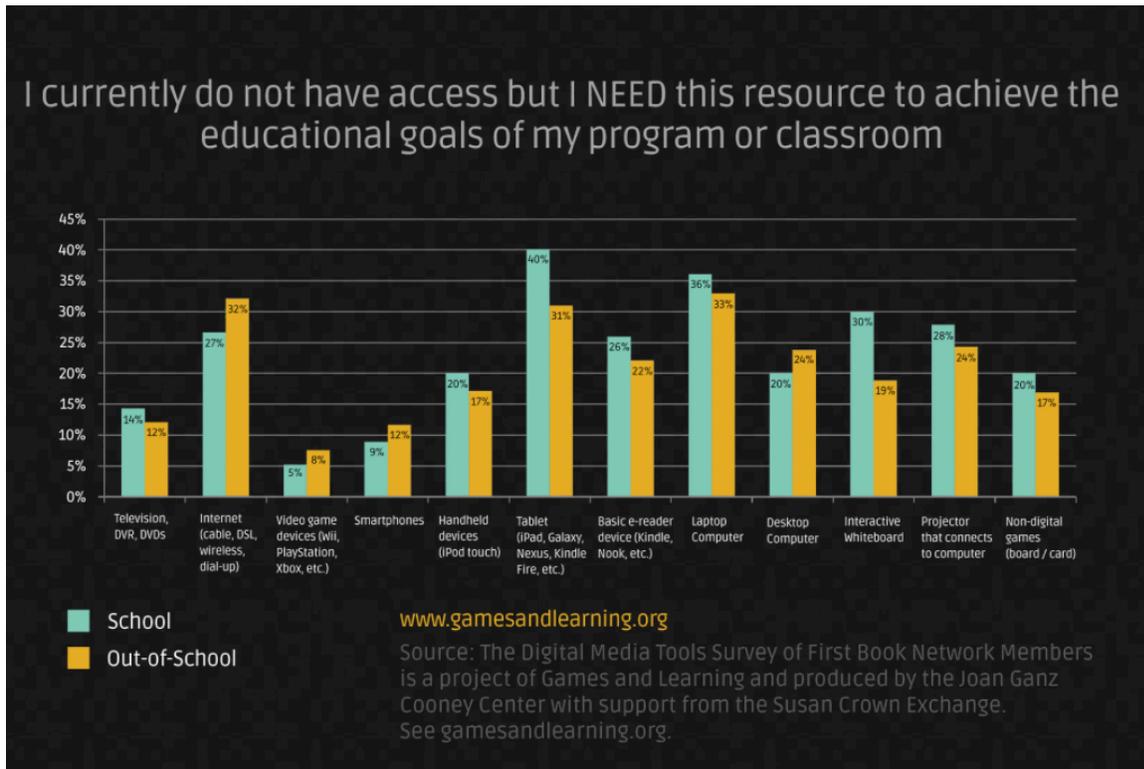
What Gets Used?

Access to technology, as any educator or student will tell you, does not equal its use and there were clear gaps between the technology teachers and instructors had access to and what they used regularly. Both school and out-of-school educators said they use videos (52% in school and 58% out-of-school) and the Internet (67% in school and 49% out-of-school) to teach new material to students, although schools seem to rely on digital technologies more for instruction.

Video and other digital games trail far behind these two tools, emerging more as a reward or incentive (52% in school and 47% out-of-school) or as a way to distract kids in between other activities (18% out-of-school). Only in school were games somewhat used to teach new material and then only 20% of teachers said they did it with any regularity.

This is sometimes caused by the difficulty out-of-school instructors and in-class teachers have fully connecting the technology to the class, said many respondents. One comment that was echoed a lot put it this way: “My biggest challenge is to incorporate technology into my everyday program. We have student desktop computers but I would love to provide e-readers to my students. We have not been able to access the vast amounts of e-books due to lack of readers I can lend to my students.”

The story here seems to be that digital games are still seen as a supplement and less a serious teaching platform and this is even more true in after-school and other programs than it is in the formal classroom.



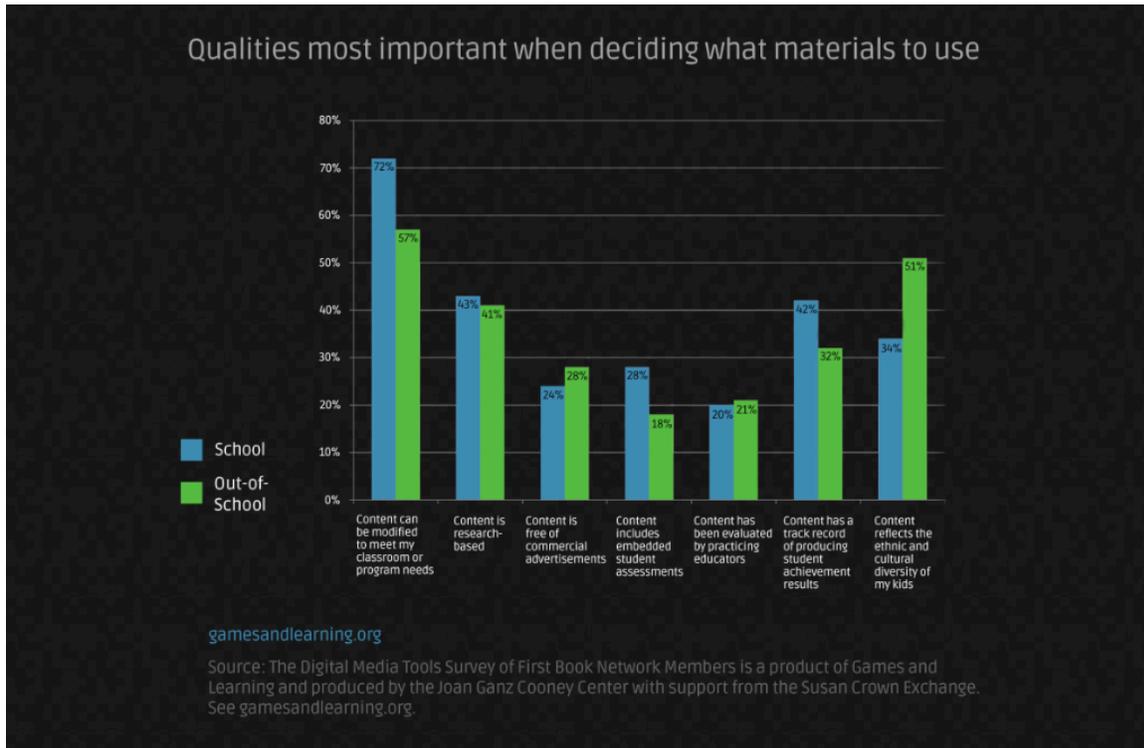
What's Needed

The shift towards mobile devices, primarily tablets, has clearly taken hold in the school system and to a large degree in the out-of-school programs. Once core technology like Internet connectivity is in hand, teachers and instructors rattle off tablets, e-readers and laptops as the top on the list of equipment they feel like they need to teach these low-income children.

Tablets were the most desired device among school teachers (40%) and the second most selected device by out-of-school program instructors and directors (31%). For both of these groups, laptops were also highly sought after (36% in school and 33% out-of-school).

Interestingly, when asked what they would want to learn more about when it came to being used to teach, both groups selected gaming consoles (47% in school and 34% of after-school programs) as the thing they were most interesting in finding out about. The groups also selected smartphones as another tool (school: 38%, out-of-school: 29%) they wanted to explore more.

One after-school program official noted that much of the technology they feel like they need to do their job remains out of reach, saying, “We are funded solely by donations and grants. Our population of students rarely has any technology at home.....not even computers. We would like to have technology for them but the outlay of funds is significant. We wouldn't have any technology support either so that could be a problem. We've had donations of used laptops but they were so slow and we have no tech person to help us with issues.”



Desired Tools

Despite the challenges these school and non-school instructors and administrators reported there are significant opportunities for digital tool developers among both markets. First of all, the out-of-school market lack the highly structured and often inflexible purchasing systems that can complicate in-school sales. And both formal and informal educators express keen interest in learning more about game-based learning and using mobile technologies to engage students.

One educator noted that they understood the possibilities of digital games and personalized learning, writing, “Schools make a mistake by jumping on the latest research-based curriculum that may only work for the homogeneous population in which it was tested. Kids are gravitating to things like Code Commanders, Minecraft, Dragon Box, LEGO robotics, SimCity, drone technology, self-tutoring programs like Khan Academy & Maker movement activities (Autodesk, MakerBot)

– and there is a reason for that and educators should be paying attention to the educational technology that has our kids so captivated and learning as well.”

Both groups cite wanting content and tools that can be easily modified for use in a program or classroom and so longer, linear games are less likely to work for either group. They both also note they look for content that is based in research and, for schools in particular, have a proven track record of helping kids do better.

Of particular note for developers, out-of-school programs as well as many school teachers note that they would prefer content that better reflects the cultural and ethnic diversity of the students they serve, with one saying they had access to only “very limited amounts of good authentic Spanish-language academic resources.”

Cost, Training Top Challenges for Low-Income Providers

Originally published November 5, 2015

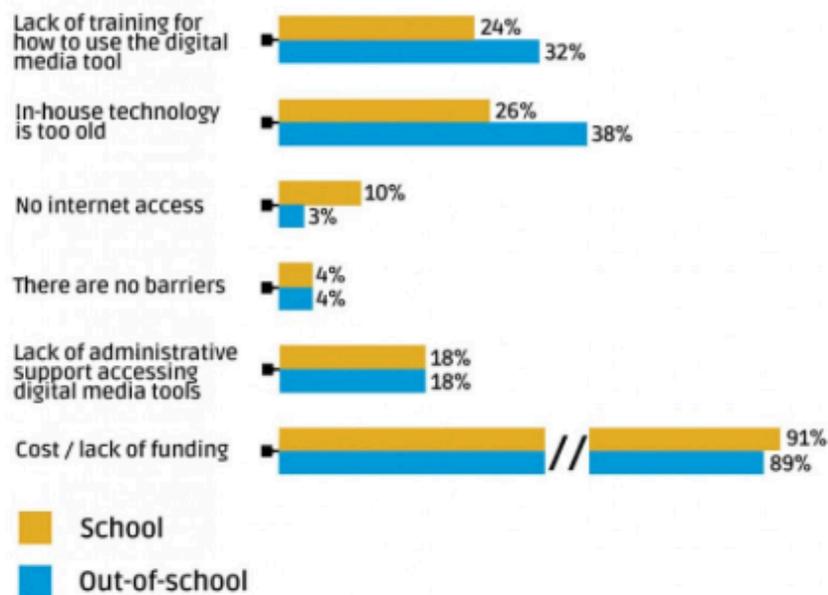
Earlier this week we published the first part of a major survey of those community organizations and schools that serve low-income students. The results indicate that while technology is increasingly available to the people who run these programs and teach in these classrooms the access to technology is far from uniform and often lags behind wealthier communities.

That said, an impressive 47% of teachers and school administrators and 34% of out-of-school program directors and instructors have expressed interest in learning more about using game consoles and other gaming tools to teach. Today, we look at what are the major impediments to those educators unlocking the power of game-based learning and other e-learning tools and what designers can do to respond.

The barriers to the use of games and other technologies echo what we have heard before from general surveys of teachers. Still, for those serving lower-income students the challenges often are more complex than in other schools. The big three barriers both in- and out-of-school folks reported were

- >Cost
- >The age of technology
- >Lack of training

Greatest Barriers in Accessing Digital Media Tools



www.gamesandlearning.org

Source: The Digital Media Tools Survey of First Book Network Members is a project of Games and Learning and produced by the Joan Ganz Cooney Center with support from the Susan Crown Exchange.

Cost is by far the largest issue. Schools (89%) and out-of-school programs (91%) both reported it as a barrier and even when they have access to technology, cost may prevent effective implementation of it. For example, one teacher in a Title I school reported, “Our school of 300 was given 10 iPads to use in our classroom. As you can guess, they are never available for the majority of our kids.” Especially in formal education, people said that technology funds often flowed to higher performing schools and left their programs under-equipped to deal with students who may have disabilities or not speak English as a first language.

And even when they do have technology, there is often not enough, as the earlier comment indicated, to go around. Of teachers in schools that serve low-income 39% specifically mentioned that they had some amount of technology available to them, but that there were not enough devices to go around.

Both groups also noted the age of technology as a problem, noting they did not have the newer tools like tablets and were instead left with aging desktops that were unreliable.

It's a reality that veteran app developers caution others to be keenly aware of when mapping out their development strategies. In discussing the findings, Neal Shenoy, founder and CEO of Speakaboos, a reading application aimed at young students, stressed the need for developers to better understand the reality of the classroom.

“Most development work, especially in edtech, is done in New York, San Francisco, maybe L.A., Boston and maybe D.C. and for the most part definitionally bubbles. Our experiences of how we consume media and hardware are radically different than most of the United States, let alone the world... If a developer saw that in your design of an educational product there is a tremendous amount of platform disparity, virtually no IT support, cost has to be rational, bandwidth is light and as sort of an icing on the cake you want build in a bridge to parents. If you knew that up front, and luckily we did, then we would design for that... If you design for that up front you save enormous costs.”

— Neal Shenoy, Speakaboos

He went on to add that although there are clear cost implications for designing across multiple platforms, the flexibility of the tool could greatly expand the possible markets for the developer. For those thinking about how to design for lower-income communities and market Shenoy said, “I think you have to design for a smartphone. The next level up is really a laptop or computer usage. We haven't seen profound tablet penetration in low-income, but smartphone absolutely and computer somewhat.”

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Even for those schools that had the equipment or managed to fund some technology, many teachers noted that schools and other programs lacked the training for students and teachers. One media teacher who helped implement technology in school had a lengthy observation that captured many of the thoughts we heard from both sectors, saying, “The reasons for barriers to technology are multi-layered. In the school where I was the school media sub and a member of the tech task force, many kids at this Title I school had no computers at home and lacked basic keyboarding skills... Internet connections are poor and affect online testing performance. Expensive replacement bulbs for projectors result in unused projectors. Lack of training on whiteboards and whiteboards incompatible with certain hardware mean they sometimes go unused! Schools need to spend more time teaching proper use and care of technology to students who are assumed to be tech savvy. Students have inadvertently erased drives, banged keys in frustration with slow computers, and jammed keys by not washing

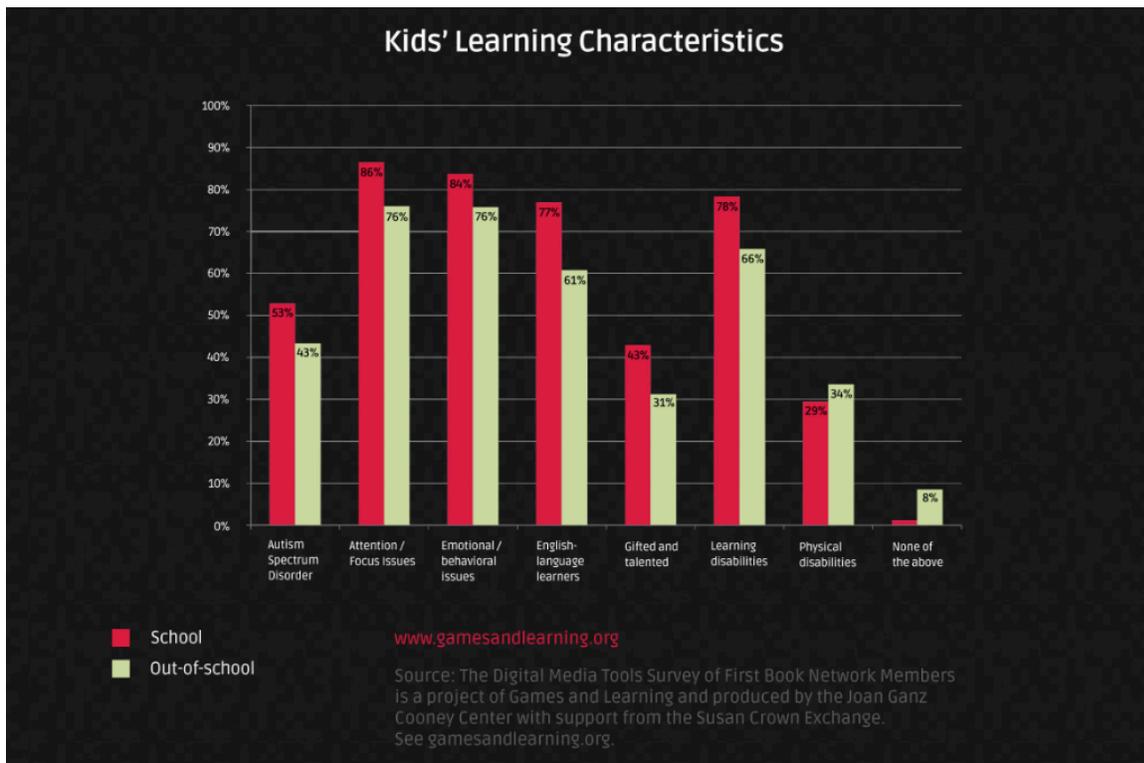
hands after lunch and gumming up keys... The school media teacher is one of the best people to lead the technology efforts across the curriculum. Teachers may have a narrow view of how to use the technology and may not fully utilize the media specialist.”

Those schools aggressive enough and savvy enough to go after grants even suffer in this area with one instructor noting, “I have won several technology grants from Samsung, but would like specific training to better utilize what I have.”

Despite the challenges these school and non-school instructors and administrators reported there are significant opportunities for digital tool developers in both markets. First of all, the out-of-school market lacks the highly structured and often inflexible purchasing systems that can complicate in-school purchasing. And both formal and informal educators express keen interest in learning more about game-based learning and using mobile technologies to engage students.

Both groups cite wanting content and tools that can be easily modified for use in a program or classroom and so longer, linear games are less likely to work for either group. They both also note they look for content that is based in research into serving young people and, for schools in particular, have a proven track record of helping kids do better.

Of particular note for developers, out-of-school programs as well as many school teachers note that they would prefer content that better reflects the cultural and ethnic diversity of the students they serve.



Diverse Programs

And that is another of the striking things we found was the wide variety of learning characteristics these teachers and instructors face. As noted, the vast majority of teachers report students have problems maintaining attention (86%) and emotional challenges (84%) and many report that they are teaching to children for whom English is not their first language (77%).

In their responses, the teachers noted that for many children learning English as well as other curricula technology often presented new problems, with one teacher noting, "I work with Hispanic families. The parents of these families have had little to no training on digital technology, making sharing of information with them more difficult during our weekly home visits. I am constantly searching for ideas to share with them in Spanish, and give them a bit of training along the way."

Out-of-school programs report many of the same types of numbers.

For both in-school and out-of-school respondents, the stress of finding the resources that hit the sweet spot of scaling to serve gifted students and also reaching those students who may be struggling or overcoming disabilities was heard throughout the comments. One teacher pleaded, "How many hours at home should I spend researching new apps, trying them out and paying for them on my personal device to see if it will help students learn? Not all educational apps and programs are really educational, and now it is completely up to the teacher to figure out what works. I love the potential for technology in education; I hate having another aspect of education that I must spend more of my personal time and money on to make it work."

Methodology

This survey was designed by the Joan Ganz Cooney Center and was fielded during an 11-week period in the Summer of 2015. The survey was sent out to the 185,000 members of the First Book Network. First Book is a non-profit that seeks to help those organizations within school and in the community that serve low-income kids. The network now has 200,000 members. The research was made possible by a grant from the Susan Crown Exchange. Some 1,459 First Book Network members responded and of those filling out the survey 988 worked in formal education and 471 work in out-of-school programs.

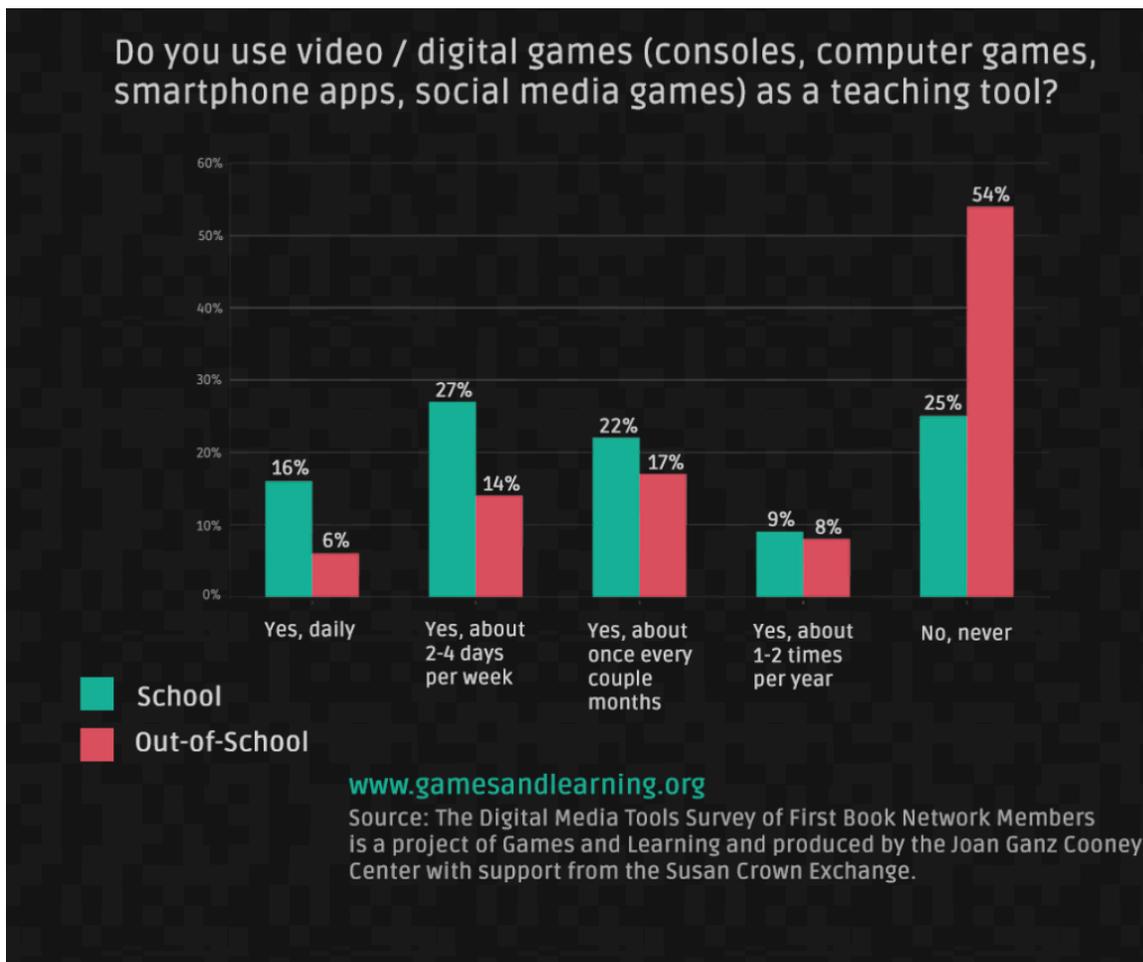
Survey Highlights Use of Games Remains a DIY Affair

Originally published April 12, 2016

A new survey of teachers and after-school program instructors finds that most come to use digital games through their own initiative or because of a colleague who connects them to the game. The findings highlight the degree to which educators still lack training and resources for finding and using games in the classroom.

The results are part of a survey conducted by the Joan Ganz Cooney Center of educators registered with First Book, the non-profit that provides free and low-cost books and educational resources to schools and programs serving children in need.

Earlier survey work had highlighted the spotty infrastructure issues – like high-speed Internet and older computers – as well as training challenges for these groups and so we returned to the First Book audiences to explore their use of digital games more directly. The new survey took in feedback from some 1,000 teachers and program officials who serve lower-income children.



Still Not the Norm

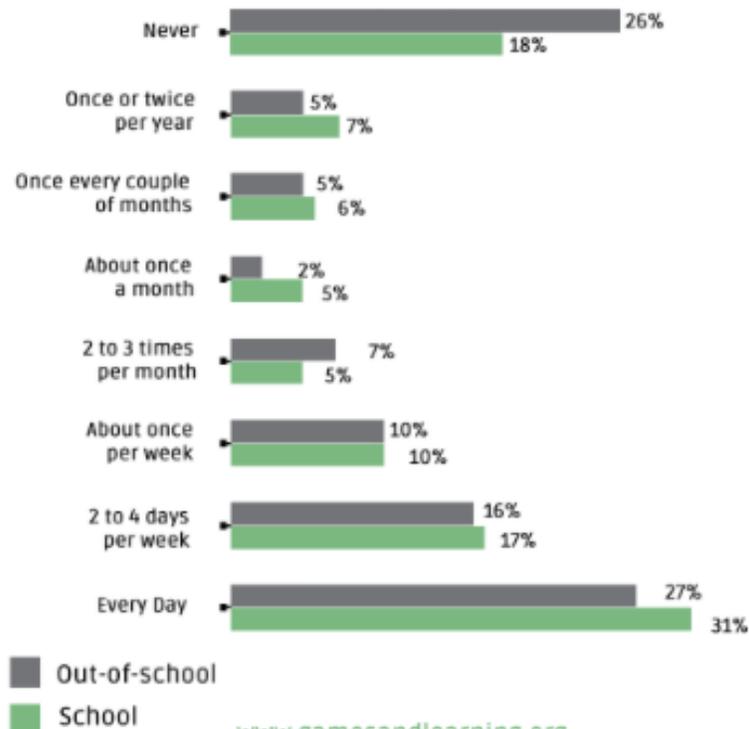
When it comes to the use of digital games, there remain sizable groups of teachers and after-school instructors who use games rarely or never.

Based on earlier interviews with First Book members the reasons for this vary, with many teachers noting that they use games only as a reward for completing their regular work and out-of-school providers noting the lack of infrastructure and training as their major impediments.

Even considering those challenges, it is still striking that 50% of out-of-school instructors and a quarter of the teachers report that they never use digital games.

Perhaps most intriguing is that most of these same respondents report playing digital games on their own smartphones, computers or consoles. These are, for the most part, gamers who don't lack experience with digital games.

How often do you play video / digital games for entertainment or other non-work / non-professional related reasons?



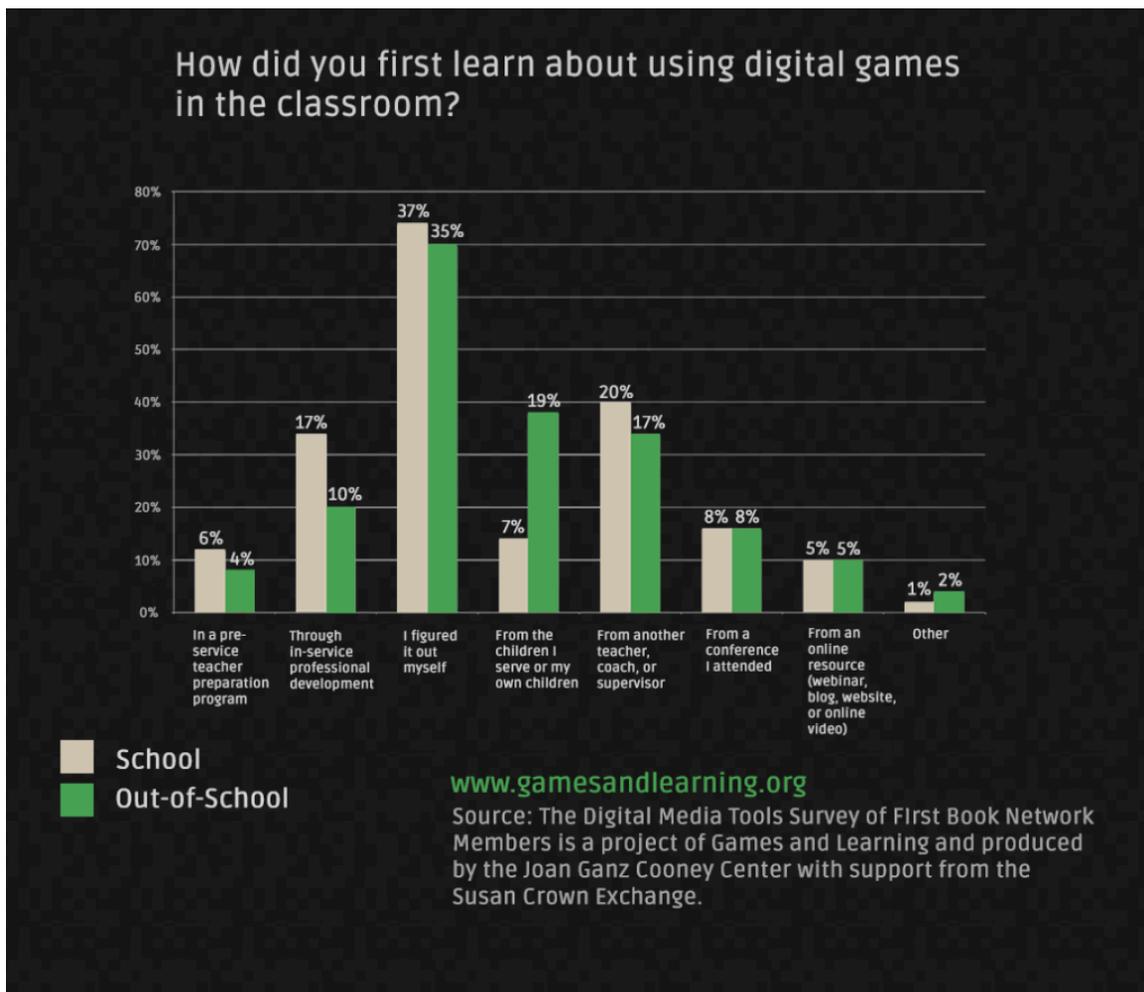
www.gamesandlearning.org

Source: The Digital Media Tools Survey of First Book Network Members is a project of Games and Learning and produced by the Joan Ganz Cooney Center with support from the Susan Crown Exchange.

And often these teachers still cite the infrastructure of both their school or program and learning games as one of the biggest barriers to wider use.

One teacher noted in the survey, “We recently started a BYOD program however not all students have tablets or smart devices. We have laptops and computers for students to use. Digital content needs to be available on all platforms and not just as apps on smart devices. Our laptops run Windows 7 so they are not running apps either.”

Another said, “As a teacher in an extremely low-income school, I feel left out of great opportunities to share with my students because we do not have access to tools such as smart phones or tablets.”



Alone Together

This personal experience may help inform one of the other striking findings from this latest survey – the degree to which use of digital tools remains a bottom-up affair.

According to the respondents, more than a third of educators figured out how to incorporate games on their own, without formal training or support. The next most significant sources of inspiration were either the kids themselves or fellow teachers.

