Closing St. Louis’ Homework Gap

Digital Inclusion & Equity
A Key Economic Opportunity and Civil Rights Issue for the 21st Century

Draft September 2017
If it’s inaccessible to the poor it’s neither innovative, radical nor revolutionary.

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COVER: Illustrator and former St. Louisan Bob Staake created an image of the Gateway Arch in black and white for The New Yorker in its Dec. 8, 2014, issue with coverage on Ferguson. “At first glance, one might see a representation of the Gateway Arch as split and divided,” Staake told the St. Louis Post-Dispatch, “but my hope is that the events in Ferguson will provide a bridge and an opportunity for the city, and also for the country, to learn and come together.”

In Partnership with

Project Appleseed: Digital Equity & Inclusion: A Key Economic Opportunity and Civil Rights Issue for the 21st Century
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Introduction

Our First 25 Years

In 1992 Project Appleseed began as one of the first non-profits in America to employ the Internet as a tool for education reform. Washington University provided our organization with its first “Gopher” site and e-mail address - years before the web and commercial e-mail was common. The Gopher ecosystem is the predecessor of the World Wide Web and “Wash U.” was one of the first universities to have an Internet connection because of its research with the Department of Defense. Over the years Project Appleseed has benefited from many partnerships that the university has provided including Total Quality Schools with the Olin School of Business and the Brown School of Social Work. Today we thank the Brown School of Social Work again for their enormous contributions to this plan of action.

This report is dedicated in remembrance of former A.G. Edwards & Sons Chairman Ben Edwards and Al Kerth, former secretary of Civic Progress, an influential organization of the area’s top business executives. Project Appleseed was planted in St. Louis with the leadership and support of A.G. Edwards and many Civic Progress companies. They provided the key financial backing and organizational support in our first decade. Ben Edwards was chair of Civic Progress’ education committee and he believed in public school parents. He visited more than 60 St. Louis Public Schools each year. He wasn’t a Principal for A Day, he talked to principals, teachers and parents everyday. He ran one of the largest brokerages on Wall Street and he regularly visited Project Appleseed’s office - often unannounced! He once told Project Appleseed president Kevin Walker he would like to be remembered as a pioneer in education reform. Project Appleseed still has a lot of work to do, but we would like to think that we are part of Ben’s enormous legacy of leadership in St. Louis and across America.

Named one of “Ten Remarkable Nonprofits That Should Be Household Words”, Project Appleseed has been selected as a top education organization by both Teacher & Parenting magazines. Each day, our web site is accessed by a majority of the 100 largest school districts in the United States. Our organization is a top search result in Google, Bing and Yahoo for “parental involvement in public schools”.

Project Appleseed has been an effective advocacy organization that engages public schools and families by mobilizing millions of volunteers, building responsibility and promoting accountability — both at school and at home. With a focus on low-income and under-served families and schools, Project Appleseed works to improve schools, build public awareness, enable public engagement, advance policy positions and advise elected officials and other decision-makers on best practices for creating optimal educational environments. The effectiveness of our efforts are clear: academic achievement rises in tandem with parental involvement.
Assessing the Landscape

Project Appleseed aims to provide access to internet enabled devices, collaborative and inclusive digital content, digital literacy training, and quality technical support for struggling families to be better able to use the internet for education, information, employment, well-being and social connections. Learning@Home is our digital inclusion project targeted at struggling St. Louis communities, and is sustainable, replicable, and broad reaching. This partnership will engage with the families of 8,000 students grades 7-12 located in the high-poverty communities of North St. Louis City and County - St. Louis, Ferguson-Florissant, Jennings, Normandy, Riverview Gardens and University City.

We believe all students and their families are entitled to opportunities to succeed, regardless of any demographic, disability, geographic, or economic factors. In tangible terms, this means closing the technology gap that serves as a barrier to improved achievement and engagement among low-income students and parents. Partnered with EveryoneOn.org, Project Appleseed can eliminate the digital divide by making high-speed, low-cost Internet service and computers, and free digital literacy courses accessible to all unconnected parents and students. We aim to leverage the democratizing power of the Internet to provide opportunity to all Americans. Through partnerships with Internet service providers, EveryoneOn reduces Project Appleseed’s program cost by offering $10 per month unlimited mobile broadband, limited free home Internet service and digital devices including $95 tablets and $150 laptops with free software.

What is the “digital divide”? This refers to the economic, educational, and social inequalities between those who have computers and online access and those who do not. What does digital equity or inclusion mean? Digital inclusion refers to the activities necessary to ensure that all individuals and communities, including the most disadvantaged, have access to and use of Information and Communication Technologies (ICTs). This includes 5 elements (NDIA 2017):

1. Affordable, robust broadband internet service;
2. Internet-enabled devices that meet the needs of the user;
3. Access to digital literacy training;
4. Quality technical support; and
5. Applications and online content designed to enable and encourage self-sufficiency, participation and collaboration.

Digital Inclusion must evolve as technology advances. Digital inclusion requires intentional strategies and investments to reduce and eliminate historical, institutional and structural barriers to access and use technology. Digital equity is a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy and economy. Digital equity is necessary for civic and cultural participation, employment, lifelong learning, and access to essential services.

In this report we will summarize the research in the target community. We will outline community needs in the target area and state measurable project goals and methodology to address those needs. We will then lay out a budget for the project’s implementation. A timeline detailing our objectives is being updated and will be updated in the coming weeks.
Current Knowledge

Project Appleseed would like to explore ways to close the digital divide by engaging parents of children and youth in the St. Louis area schools using technology and internet connections provided through EveryoneOn a partnership of tech organizations. Given Project Appleseed’s desire to see this technology used by parents to both engage with schools and track the progress of their children, Washington University graduate research students in the Brown School of Social Work posed the following evidence based practice question: What are the best practices or models for increasing parental involvement using technology in schools?

In her 2013 survey of parents of elementary school students in Costa Mesa, CA, Christine Olmstead found that parents and teachers both viewed technology as an important way to engage parents, with 91% of parents and 100% of teachers agreeing that it was important for the school to have a means of communicating with parents using technology. According to Olmstead’s (2013) research, proactive involvement from parents has the biggest impact on student success and is defined as home-based activities, like parents monitoring their children’s progress in school, helping with homework, and keeping in touch with teachers. The biggest barrier to parental involvement identified by Olmstead’s (2013) survey was lack of time due to family needs and work schedules. Technology was identified as a way that greater involvement could be fostered, despite busy work and family schedules. For instance, Wells and Sheehey (2012) identify technology as a way that parents who have children with intellectual disabilities can keep up with their children's IEP’s, even if they cannot be physically present at a meeting. With programs like Skype, parents are increasingly able to participate in educational planning for their children, sharing documents and concerns from wherever they are (Wells and Sheehey, 2012).
How America's Schools are Addressing the Homework Gap

51% of principals say ensuring student access to technology outside of school (digital equity) is a major challenge today. Compared to only 30% of principals in 2010.

68% of teachers are reluctant to assign digital homework out of concern that their students do not have safe and consistent home Internet access. 51% say they need that confidence in order to effectively integrate technology in the classroom.

1/5 of students say they are impacted by the homework gap - they cannot do homework because they lack internet outside of school.

Homework gap students are resourceful:
- 35% go to school early or stay late to use their school's Internet
- 24% use their public library Internet
- 19% are going online to do homework at fast food restaurants or cafés

68% of students say they need safe and consistent Internet access outside of school to be successful in school.

How are schools and districts addressing the homework gap?

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Doing this</th>
<th>Considering this</th>
<th>No plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allowing students on campus early or after school to access school network</td>
<td>68%</td>
<td>16%</td>
<td>16%</td>
</tr>
<tr>
<td>Encouraging libraries or other public Internet locations to give students priority access</td>
<td>52%</td>
<td>21%</td>
<td>27%</td>
</tr>
<tr>
<td>Instructing students to download web-based assignments and resources to USB sticks while at school</td>
<td>45%</td>
<td>20%</td>
<td>34%</td>
</tr>
<tr>
<td>Discouraging homework assignments that are &gt;100% Internet dependent</td>
<td>37%</td>
<td>17%</td>
<td>46%</td>
</tr>
<tr>
<td>Providing WiFi access in the school parking lot for staff and students</td>
<td>34%</td>
<td>15%</td>
<td>52%</td>
</tr>
<tr>
<td>Working with businesses to provide safe locations for student Internet access</td>
<td>17%</td>
<td>24%</td>
<td>46%</td>
</tr>
<tr>
<td>Equipping school buses with WiFi hotspots</td>
<td>5%</td>
<td>24%</td>
<td>71%</td>
</tr>
<tr>
<td>Paying for home Internet for low income families</td>
<td>4%</td>
<td>14%</td>
<td>83%</td>
</tr>
</tbody>
</table>

Source: Speak Up 2015 Research Project Findings - the results of the authentic, unfiltered views of 505,676 K-12 students, parents and educators nationwide. Speak Up is an annual research initiative of Project Tomorrow, a global nonprofit organization, and is supported by these innovative companies: Blackboard, Inc., BrainPOP, CDW, DreamBox Learning, Qualcomm Wireless Reach and Scholastic. Learn more about Speak Up and other research findings from Project Tomorrow at tomorrow.org.
In Olmstead’s (2013) study, when asked to define parental involvement, working parents tended to describe proactive forms of involvement while those who were not working tended to describe reactive forms of involvement (i.e., volunteering, attending meetings, etc.). Teachers tended to cite proactive involvement as most important to student success. Given that many of the low-income families that Project Appleseed hopes to serve include working parents, this may be an important consideration, making it more important to focus on teaching parents how to engage with the school from home using technology than it is to urge them to volunteer at the school (Olmstead, 2013).

According to Donna DeGennaro’s (2010) case study at Frederick Middle School in Boston, MA, providing low-cost laptops and internet connections to low-income families who did not have access has empowered these parents to not only become more proactive in their involvement, staying in touch with teachers and following the progress of their children at school, but has also assisted these parents in gaining necessary computer skills for employment and building stronger relationships with their children. Other studies have described the need for access to technology at home as well. Specifically, technology such as laptops is very important to providing further academic engagement between parents and students at home (Patrikakou, 2016). Providing access to these devices can engage parents, assisting them in understanding their child’s academic work and providing positive reinforcement to complete homework. Teachers and administration will be able to engage their parents through these devices to decrease the homework gap, but most importantly to involve parents in their child’s education (Patrikakou, 2016). Some of the major benefits that have come with providing parents with computers and computer literacy training have been higher academic performance, better student behavior, and increased attendance rates (DeGennaro, 2010).

With that said, in the case of Frederick Middle School, it is important to note that this increase in proactive involvement was not the result of providing low cost technology and internet connections alone. Instead, the school initiated an entire program aimed at bringing parents to the school and training them in computer literacy. To obtain their $50 laptop, parents had to first complete 25 hours of
computer literacy training, with their child as their instructor. Lessons covered training in how to use computer programs (i.e., Microsoft Office or Skype) and the internet (i.e., internet searches), with most lessons revolving around ways parents could use this technology to better track their child’s education. For instance, a lesson on Excel might involve setting up a spreadsheet for tracking their child’s homework and progress in school, and a lesson on using the internet might involve accessing and using the school’s website and online tools (DeGennaro, 2010). This case study would seem to suggest that best practices for providing technology should also include a parent technology training component to maximize success.

### Closing the Homework Gap - St. Louis

Project Appleseed can provide laptops and high-speed broadband for struggling families along with training in parenting and digital literacy. If we supported all 8,000 families in one year, it would only take $2 million for devices and broadband to close the homework gap in St. Louis.

<table>
<thead>
<tr>
<th>School District</th>
<th>Number of schools</th>
<th>Number of Students</th>
<th>% of Students No Internet</th>
<th>Est. # of Students No Internet</th>
<th>Grades 7-12 Households No Internet</th>
<th>Cost of Laptops @ Household</th>
<th>One Year Broadband @ Household</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Louis</td>
<td>72</td>
<td>22000</td>
<td>50</td>
<td>11550</td>
<td>4423</td>
<td>$884,600</td>
<td>$221,150</td>
</tr>
<tr>
<td>Ferguson-Florissant</td>
<td>25</td>
<td>12000</td>
<td>31</td>
<td>5100</td>
<td>1216</td>
<td>$243,200</td>
<td>$60,800</td>
</tr>
<tr>
<td>Riverview Gardens</td>
<td>13</td>
<td>6300</td>
<td>48</td>
<td>2000</td>
<td>738</td>
<td>$147,600</td>
<td>$36,900</td>
</tr>
<tr>
<td>Normandy</td>
<td>11</td>
<td>4700</td>
<td>50</td>
<td>2303</td>
<td>885</td>
<td>$158,415</td>
<td>$44,250</td>
</tr>
<tr>
<td>University City</td>
<td>7</td>
<td>3100</td>
<td>30</td>
<td>1466</td>
<td>338</td>
<td>$67,600</td>
<td>$16,900</td>
</tr>
<tr>
<td>Jennings</td>
<td>8</td>
<td>3000</td>
<td>53</td>
<td>1077</td>
<td>438</td>
<td>$87,600</td>
<td>$21,900</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>136</strong></td>
<td><strong>50,712</strong></td>
<td><strong>44</strong></td>
<td><strong>22,701</strong></td>
<td><strong>8,030</strong></td>
<td><strong>$1,589,015</strong></td>
<td><strong>$400,900</strong></td>
</tr>
</tbody>
</table>

Source: Missouri Department of Elementary and Secondary Education

The 2017 Project Appleseed team at the Brown School of Social Work at Washington University in St. Louis. Pictured: April Hart, Hailey, Kusch, Jamie Martos, Samantha Knight, Nay’Chelle Harris & Bianca Kaushal.

### Examination of Social Environment

The crux of Project Appleseed’s research interests involves the interaction between the “digital divide,” or the gap between people who have access to computer technology and those who do not (Steele-Cardin, 2002), and parent-school engagement at public high schools and middle schools in the City of St. Louis. Thus, to answer the research questions, Project Appleseed also completed a review of the social, economic, and political factors that make up the “digital divide” in the U.S. and especially in St. Louis.
Parent-school engagement has long been identified as a critical factor that effects academic achievement among adolescents (Henderson & Berla, 1996; Kellaghan, Sloane, Alvarez, & Bloom, 1993, as cited in Mo & Singh, 2008). Low-income parents have significantly lower school engagement than higher-income parents, and contributing factors include lack of time due to work and/or transportation, lack of confidence in interacting with teachers, a less than welcoming school climate, and their own negative school experiences (Velsor & Orozco, 2007). A new barrier to parent-school engagement among low-income families is the lack of Internet and technology access at home, also known as the digital divide.

The digital divide disproportionately affects low-income, minority populations. The U.S. National Telecommunications and Information Administration (1999, 2000, 2002) found that internet and computer access is heavily influenced by an individual's education, income, and race. While those statistics are still valid, the progression of technology and more affordable pricing have allowed for most low-income families to have some form of internet access. Nevertheless, 33% of families living in poverty have only mobile internet access and 9% have no access, leaving close to half without home internet access (Rideout & Katz, 2016).

Huang & Russell (2006) explain that while more Americans than ever now have access to internet, the digital divide still disproportionately affects blacks and Hispanics, “[with] penetration rates at 23.5 percent and 23.6 percent respectively, far below the national average internet penetration rate of 41.5 percent” (p. 162). While there are various factors that contribute to lack of parent-school engagement, the digital divide is one that disproportionately affects minorities and low-income families. This is true to such an extent that Larry Irving of the National Telecommunications and Information Administration (NTIA) has referred to the digital divide as the “racial ravine” (Steele-Carlin, 2000). With schools’ growing dependency on technology as a primary communication method, the digital divide is a substantial barrier to parent-school engagement.

Despite technology’s ability to facilitate the engagement process, however, research also shows that consistent parental involvement in education is largely based on relationships, parental capacity, and parental self-perception (Reynolds, Crea, Medina, Degnan, & McRoy, 2014). Regardless of medium, psychological motivators such as parental self-perception (the role parents believe they play in their child’s life) and parental self-efficacy (parents’ belief that they can positively influence their student’s outcomes) are salient predictors of parental involvement. Parents with a high self-perception and degree of self-efficacy are more likely to be involved along various modes of involvement (Reynolds et al., 2014). At the same time, regardless of access to technology or proactive attempts at relationship building on the part of the teacher or school administrators, for parents constrained by time, resources (economic or otherwise), stress, or education level, involvement will be lower than that of parents who do not have to contend with those constraints (Khanipour Roshan, Jacobs, Dye, & DiSalvo, 2014). Technological access can alleviate some of the concerns around factors that can contribute to or inhibit parental involvement, but only as a supplement to, and not a replacement for, more traditional parental engagement strategies.
Sociocultural Perspective

The digital divide is especially concerning as it disproportionately affects low-income, minority communities—one of the consequences being difficulty in engaging parents with their children’s education. However, the earlier stated studies showed that many families have access to the internet on mobile devices. If this is the case, why is parent-school engagement still such a substantial issue for low-income families? Through the lens of cultural historical activity theory, the school is viewed as a separate space from home, “within different social, cultural, and political boundaries” (Barton, Drake, Perez, Louis, & George, 2004, p. 5). Barton, Drake Perez Louis, & George (2005) explain that parent-school engagement is developed and sustained through social participation in different “spaces”—in low-income, urban communities, this participation is not so commonplace as most social interactions are limited to a set number of “spaces”. This produces a lack of practice, or development, in participating in different settings—leading to parents’ lack of comfortability engaging with their children’s schools.

Vygotsky’s sociocultural theory focuses on the impact of both social and cultural influences in the cognitive development of individuals. The very first influences of social and cultural development are undoubtedly from the caregiver. The beginning phases of learning and adopting practices and characteristics are marked by the learner depending on those with more experience when replicating behavior, e.g., children learning from their parents and modeling similar behavior (John-Steiner & Mahn, 1996). Exposure to parent-school engagement at a young age increases the likelihood of significant parent-school engagement in adulthood (John-Steiner & Mahn, 1996). Conversely, children having little to no experience with parent-school engagement are less likely to do so themselves as adults.

When applying both above mentioned sociocultural theories, lack of exposure and experience with parent-school engagement largely contributes to decreased parent-school engagement in low-income communities. Time, transportation, self-confidence, personal experiences, and the digital divide are also documented barriers to school engagement among low-income families and parents. Numerous inherent barriers are working against these families, but lack of Internet accessibility is one that can easily be addressed and remedied.

Parent Communication Preferences

The National School Public Relations Association surveyed parents and residents about their preferences when it came to content, delivery systems and frequency of communication from their schools.

The survey covered 43,410 responses from 50 school districts in 22 states conducted last spring as part of a communication accountability program. Parents want more information about their child’s progress in school on a regular basis and definitely want to know if their child is struggling before it is too late to do something about it. They prefer to have it all delivered to them in electronic/internet-based sources like e-mail, e-newsletters, district websites, and parent portals (NSPRA 2011).
Types of Affordability and Digital Inclusion Programs

The Federal Reserve of Dallas provides this list of affordability and digital inclusion programs that can be used to close the digital divide. (Jordana 2016)

Affordability Programs

- Grants for new or refurbished desktop computers and laptops
- Computer manufacturer gift of desktop computers, tablets and laptops
- Governmental agency/departmental gift of used desktop computers and laptops
- University or nonprofit gift of refurbished desktop computers and laptops
- School programs that grant students laptops
- Municipal libraries that allow citizens to borrow laptops
- School computer centers
- Municipal library computer centers
- Nonprofit technology centers with access to computers

Digital Inclusion Programs

- City/school/nonprofit digital literacy programs—teach how to use a computer and navigate the internet
- City/school/nonprofit financial literacy programs—teach basic concepts of personal financial management and introduction to online banking
- Boy Scouts of America Personal Management Merit Badge—six-month program that teaches the basics of personal finances and budgeting, including opening and maintaining a checking account
- School/university/nonprofit software coding training program
- School/university/nonprofit computer refurbishing skills program
- School/community college computer hardware and software technical skills certification and associate degree programs

Households with School-Age Children that Do Not Have Broadband Access

<table>
<thead>
<tr>
<th>Percent lacking a high-speed connection at home</th>
<th>All</th>
<th>White</th>
<th>Black</th>
<th>Hispanic</th>
<th>Asian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual income under $50,000</td>
<td>31.4</td>
<td>24.6</td>
<td>38.6</td>
<td>37.4</td>
<td>15.5</td>
</tr>
<tr>
<td>$50,000+</td>
<td>8.4</td>
<td>6.7</td>
<td>13.0</td>
<td>12.8</td>
<td>4.9</td>
</tr>
</tbody>
</table>

Percent with a high-speed connection at home

| Annual income under $25,000 | 82.5 | 88.0 | 71.3 | 72.2 | 92.3 |
| $25,000-$49,999              | 80.5 | 87.9 | 73.6 | 56.8 | 79.0 |
| $50,000-$99,999              | 95.7 | 90.5 | 91.4 | 90.2 | 94.0 |
| $100,000-$149,999            | 94.3 | 95.1 | 91.7 | 90.6 | 94.5 |
| $150,000+                    | 96.7 | 97.0 | 93.5 | 93.9 | 97.9 |
Goals and Methodology

1. **Targeted families become better able to access the Internet for education, parent training and financial planning in community environment.** (NDIA 2017)
   a. Enact Digital Scholarships, Digital Lending (devices and hotspots) at schools, libraries, community centers and community events.
   b. Provide family oriented community digital education nights aimed at providing familiarity with computational basics, familiarity with logic systems and generational digital engagement.
   c. Provide for family use of Internet at community events along with training and support.
   d. Provide family-use computer labs at schools that provide after school child care.

2. **Students become better able to access the Internet for education in a family friendly environment**
   a. Provide access through family science nights through our Digital Lending program.
   b. Provide access in junior high and high school libraries through our Digital Lending program.

3. **Adult learners have more flexible access to digital resources for education, professional development, and quality of life improvements.**
   a. Provide access to Digital Lending program in St. Louis Public Libraries and St. Louis County Libraries.
   b. Free mobile phones will be offered to all income-eligible parents as part of the government-funded Lifeline Assistance program.
   c. Partner with GED programs to provide Digital Scholarships and semester long Digital Lending to qualifying adult students.
   d. Work with Title I and after school programs to enact a computer lab open to adult professionals with children so that they are able to use WiFi enabled devices while their child is looked after.

4. **Schools are better employed as community centers to provide digital resources so that families have more positive and continuous interactions with educational facilities.**
   a. Work with Title I director to help provide after school childcare.
   b. Work with school IT professionals to provide family access to digital resources.
Learning@Home Partnership Projects

**Digital Scholarships**

Door-to-door canvassing and home visits will mark the beginning of the systematic and direct contact with targeted families. Project Appleseed will partner with local grassroots nonprofits to engage volunteer canvassers who will knock on doors of private residences within a particular geographic school attendance area, engaging in face-to-face personal interaction with parents, grandparents and caring adults. Each resident family will be asked to take part in the Digital Scholarship program and earn a free device and a deeply discounted connection to the Internet. Eligible families must have at least one student enrolled in grades 7-12; attend a high-poverty Title I school. Each family participating will receive training in digital literacy. Scholarship parents are required to attend two parent/teacher conferences and give volunteer time - a minimum of 10 hours in their student’s schools each year.

**Digital Lending Program (Device and Hotspot)**

Hot spots are low-cost devices that provide mobile broadband wireless Internet access anywhere. They can fit in a pocket and connect multiple devices. They bring the Internet into the home for those who do not have access. Project Appleseed will seek to partner with public libraries, school libraries and more on a lending program that is cost effective, sustainable and able to reach staff, students and the community at large. Partnering with non-profits, schools, local government, local businesses, and community organizations can increase the popularity and success of our program as well as help target patrons who might benefit the most from the mobile hotspot program.

**Computer Classes at the Library**

The perfect computer classes for beginners introduces students to starting the computer, navigating the desktop, using the mouse, and the basic purposes of special function keys on the keyboard. Advanced classes are also available. Internet training classes have been coordinated in two dozen St. Louis Public Library and St. Louis County Library locations. Free computer classes are geared towards all skill levels and audiences, covering topics like borrowing eBooks at the library, creating resumes, and using programs like Word and Excel. The libraries offer several computer classes to cardholders, ranging from basic to advanced.

**After School Family Computer Lab**

The Digital Inclusion Partnership will identify Title I schools with after school programs to create family and parent centered computer labs made up of devices sustainably sourced and preloaded with digital literacy curriculum, and designed to be packed into a small space, so a permanent physical room is not required. The computer labs will be facilitated by volunteers from local schools or universities in exchange for a long term lending or ownership of a device, either a computer or a hotspot. These volunteers will set up and take down the lab each day, and provide resources that are more accessible for use by underprivileged communities like printing and technical support. Computer labs in later iterations may also have a device and hotspot lending function as well as food provided for families. These labs potentially may feature afternoon talks or presentations by local anchor institution representatives. This project will be designed to be replicable on a state and national level.
Cost Effectiveness of Scaling Project to Larger Populations

The total five-year budget for the Learning@Home program in the targeted St. Louis area school districts with a student population of roughly 50,000 students is $5,744,400 in start-up and operating costs. The average cost is $114.00 per student served. A study on costs of parent engagement in education conducted by (Lawrence O. Picus & Associates, 2009), reveals that the range of costs is wide and connected with the types of services provided through the parent engagement program. An estimate provided in the study ranged from $93 to $1,254 per student. The proposed project's cost per student estimate is near the lower end of the estimates provided in the study. When compared with what the literature suggests as the range of costs associated with parent engagement programs and the potential benefits in terms of student achievement the costs of the proposed project are very reasonable.

Estimated Costs Including Start-Up and Operating Costs

The cost per student including start-up and operating costs per project year is $13.40 for the first year (total budget divided by number of total students served); $21.20 for the second year; $27.29 for the third year; $26.28 for the fourth year; and $26.70 for the fifth year.

### Budget Narrative

The number of employees (whether full-time or part-time, and including our own) we will need to execute the project or program successfully - 11 FTE paid employees. Their salaries or hourly wages total:

- Project director: $90,000
- Director of parent & student engagement: $80,000
- Director of training: $70,000
- Director of technology integration (in-kind): $70,000
- Development director: $65,000
- St. Louis County Field Director: $50,000
- St. Louis Field Director: $50,000
- Field Organizers (3): $105,000
- Admin.Support: $40,000
- Evaluation: $75,000

Year 1 is $300,000 to assemble the upper management team and other key positions. Years 2-5 are $1,835,500. This includes all positions running at capacity. The web developer position would go to .20 FTE for system maintenance purposes after year 1. After year 3, the field organizers would go to 0.5 FTE due to gained field efficiencies after years 1 and 2.

### Budget Overview - 2018-2023

<table>
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<th>Categories</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
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</table>
Fringe Benefits $433,400

Employee benefits generally amount from 21% to 35% of personnel salaries. They include social security, Medicare, unemployment, workers compensation, and, where applicable, health insurance. The estimated fringe rate is 22%.

Travel $40,000

This includes ground transportation, airfare, lodging, and meals if travel is an essential part of your operations and business procedures. Estimated that roughly 100 days per year for training and meeting purposes. The majority of employee travel will be done locally by canvass supervisors familiar with the Missouri territories.

Equipment $2,750,000

Each Learning@Home Scholarship will be funded for a low cost computer, software and high-speed broadband. Budget assumes support for 8,000 families in the five year period, which will cost no more the $2.0 million - @ $250.00 per family - under current pricing from EveryoneOn / RightPC/PC's for People. This includes computers and telecommunications, office furniture, and all other items needed for the operational function of this request. Equipment will consist of computers, internet hardware, telecommunications systems, office furniture, scanners, and copiers.

The total up front cost for equipment for year one is $250,000, which is a combination of purchases of Learning@Homes equipment, smaller equipment and rental of larger equipment.

Supplies $66,000

This includes office supplies and all goods that are required for your operation. Materials supplies consists of basic office supplies, printing and copying expenses, and postage. The costs for supplies will average $13,200 per year, with a majority of cost stemming from postage for targeted mailings.

Contractual $150,000

Rent generally refers to the cost of leasing space for your operation. It is usually calculated on a per-month basis and estimated as an annual cost. 1,200 square feet per office location. Total for all locations will be roughly $30,000 per year for locations in St. Louis, MO.

Professional Services $15,000

Professional services include accountants, legal expertise, advertising, marketing, and contractors who specialize in providing some form of service that your internal staff can’t. We would require the occasional services of attorneys and accountants. We have estimated this cost to be $15,000 per year.

Training Stipends $170,000

Training and development are the biggest factors to the success of parental engagement. Without training parents in the school districts we seek to improve, our efforts are meaningless. Thus, training and development share a burden of the largest cost. There is an incentive sub grant to encourage schools’ participation in Project Appleseed and to foster increased parental involvement. We have estimated the training cost for all locations to be $170,000.
Funding & Sustainability

Often, one of the most difficult questions in planning for increased broadband access and digital inclusion is how the identified initiatives will be funded. The following section identifies some of the common and some of the more innovative funding strategies that communities have used to support these initiatives.

There are several ways to provide long-term funding for the Learning@Home program. In the closing months of the Obama administration, broadband availability for everyone was a primary goal. With the advent of the Trump administration we are witnessing an abandonment of this priority with the killing of the FCC’s Lifeline program which would have helped millions more Americans get online at a price they can afford, and open up the market for more competition to serve their connectivity needs. This means we must step-up our efforts to make current private and public programs work in St. Louis for struggling public school families to raise support to meet program needs.

**Partnership Support**

**EveryoneOn:** Project Appleseed’s three year-old partnership with EveryoneOn, Project Appleseed is able to access $10.00 per month - unlimited - mobile broadband service and families can purchase discounted devices, including $95 tablets, $125 desktops and $150 laptops. EveryoneOn is a national non-profit that leverages support from companies to address affordability of service and equipment, and digital literacy. The organization partners with ISPs to bring free or low-cost Internet service to low-income families in 48 states and the District of Columbia. They also partner with device refurbishers to provide low-cost tablets and computers and partner with libraries and nonprofits to promote free digital literacy courses at sites across the country. Through our website, consumers can identify and compare low-cost. Project Appleseed will offer “Spectrum Internet Assist” in the Fall of 2017 to qualified families, a program through which qualified households can receive high speed internet - with unlimited data - for $14.99 per month. In order to qualify, a member of the household must be a recipient of either the National School Lunch Program or receive Supplemental Security Income.

**Underutilized Federal Programs**

**New Markets Tax Credits (NMTC):** The NMTC program can be used for investments in broadband but it is underutilized for this purpose. Administered by the U.S. Department of the Treasury’s Community Development Financial Institutions fund, the New Markets Tax Credits program was established by Congress in 2000. The program attracts private-sector capital investment into urban and rural low-income areas to help finance community development projects, stimulate economic opportunity, and create jobs in the areas that need them most. The program permits investors to receive a credit against their federal income taxes for making qualified equity investments in designated Community Development Entities. In turn, those entities must re-invest the equity investments in low-income communities.

**St. Louis a hub of New Markets activity.** According to Amelia Lewis, a partner at Thompson Coburn law firm, “St. Louis is headquarters for a number of major participants in the industry. U.S. Bank has been a longtime investor in the program and has the highest volume of investing across the country. It has a large presence in St. Louis and a major headquarters on Washington Avenue. There also are longtime, very successful CDEs based in the St. Louis area, including Advantage Capital Partners, Enterprise Bank and Trust and the city itself. The city is one of those successful governmental entities in the program since its inception.” (Chirstian, 2015)
**Community Reinvestment Act (CRA):** The Federal Reserve, the Department of Treasury, and the Federal Deposit Insurance Corporation (the Agencies) are clarifying that efforts to supply broadband to low- and moderate-income areas and to support broadband adoption and digital inclusion efforts in those areas meet the definition of “community development” under the Community Reinvestment Act (CRA). The law requires that a bank’s record in helping meet the credit needs of their surrounding communities be taken into account when considering applications for new branches or proposed mergers. To this end, a “community development” test factors into the evaluations of small, intermediate, and large financial institutions. (Jordana 2016)

In recognition that broadband is essential to the economic health of residents in underserved communities, the Agencies have advised that “a new or rehabilitated communications infrastructure, such as broadband Internet service” is an “example of an activity considered to help to revitalize or stabilize underserved nonmetropolitan middle-income geographies.” Because communities require not only affordable access to broadband in order to manifest the opportunities that broadband affords, but also access to affordable devices, digital literacy training, technical support, and access to relevant content, the Agencies may wish to consider clarifying that initiatives that support any of those elements would likely qualify as “community development” under the CRA—thus incentivizing financial institutions to invest in local digital inclusion initiatives.

The Federal Reserve Bank of Dallas has just published “Closing the Digital Divide”, which the Bank’s President calls “a toolkit for bankers seeking to bring digital opportunity to underserved, rural and tribal communities through access to high-speed broadband. Bank investments as well as partnerships with local governments, nonprofits and educational groups can help ensure equitable access to the growing digital economy.”

The new document’s primary author is Jordana Barton, senior advisor for Community Development at the Bank’s San Antonio Branch, who previewed much of its content in a presentation at NDIA’s Net Inclusion Summit in May. Its purpose is to educate commercial bank leaders about importance of digital inclusion to low and moderate income communities, explain the basic elements of community digital inclusion strategy, and show how investments and grant support for such strategies can get banks credit toward their Community Reinvestment Act obligations.

The CRA provides a significant opportunity to help close the digital divide across communities while simultaneously benefiting financial institutions and improving economic stability. The CRA is a law that encourages banks to make loans and investments and provide services to LMI [i.e. “low and moderate income”] communities. The law was passed in 1977 to address redlining—the denial of credit to individuals based on where they live. Every year, the CRA helps bring more than $100 billion in capital to LMI communities across the country. The law is intended to be broad, flexible and responsive to changes within communities.

Barton points to community investment areas that are already recognized as priorities by Federal CRA regulators, in which digital access and skills (or the lack of them) have become critical factors. These areas include broadband connection infrastructure itself, as well as workforce development, education, access to financial services, small business development and access to health services -- all heavily affected by community residents’ digital access and skills.
Title I Pay for Success - Social Impact Bonds: Project Appleseed will employ financing the Learn@Home program with social impact bonds. With the new Every Student Succeeds Act (ESSA) of 2015 becoming the K-12 law of the land 2015, some nonprofits are taking advantage of one particular clause: the “Pay for Success” initiative. It’s a program that allows for private investors to profit from returns on the upfront financing of educational programs, for example, with social impact bonds. (McIntyre, E. 2017)

Since 2011, social impact bonds have moved from concept to execution in the United States. These bonds, known as SIBs, are innovative financing tools for social programs: Private investors pay the upfront costs for providing social services, and government agencies repay the investors with a return—if and only if a third-party evaluator determines that the services achieve agreed-upon outcomes. These agreements may be a viable source of expanding support for preventive interventions that could both demonstrably improve social outcomes and save cash-strapped governments money on later remedial services.

The Federal Reserve St. Louis has held a forum on Pay for Success (PFS) financing in 2015, “It offers an attractive alternative to the status quo of paying for programs instead of results. PFS financing has the potential to improve the social sector’s effectiveness by rewarding programs that work, encouraging innovation, validating progress and attracting new sources of private capital to the anti-poverty cause. PFS could potentially transform the social sector into a competitive marketplace that efficiently reduces poverty.”

Within the new ESSA law, the Pay for Success initiative can be found in Title I, Part D, (“Prevention and Intervention Programs for Children and Youth Who Are Neglected, Delinquent, or At Risk”)

Pay for Success Initiative.— The term ‘pay for success initiative’ means a performance-based grant, contract, or cooperative agreement awarded by a public entity in which a commitment is made to pay for improved outcomes that result in social benefit and direct cost savings or cost avoidance to the public sector. Such an initiative shall include—

(A) a feasibility study on the initiative describing how the proposed intervention is based on evidence of effectiveness;

(B) a rigorous, third-party evaluation that uses experimental or quasi-experimental design or other research methodologies that allow for the strongest possible causal inferences to determine whether the initiative has met its proposed outcomes;

(C) an annual, publicly available report on the progress of the initiative; and

(D) a requirement that payments are made to the recipient of a grant, contract, or cooperative agreement only when agreed upon outcomes are achieved, except that the entity may make payments to the third party conducting the evaluation described in subparagraph (B).
**Educational Broadband Service (EBS):** In the last week of the Obama administration, the Consumer and Governmental Affairs Bureau of the Federal Communications Commission (FCC) called for, “Support using the Educational Broadband Service to provide service to underserved areas. The Commission may also wish to consider how the Educational Broadband Service (EBS) might further broadband adoption and digital inclusion goals.” (FCC 2017)

With skyrocketing demand for bandwidth and mobile coverage, internet companies have been forking over millions of dollars for spectrum licenses when the FCC occasionally auctions them. And yet, decades ago, the FCC granted thousands of spectrum licenses — free — to educational entities nationwide for a range of frequencies now known as the Educational Broadband Service. Most EBS license holders, however, can’t use their portion of spectrum the way Albemarle County has. Explaining why requires some history. (Berdik 2017)

The EBS spectrum was first called ITFS (Instructional Television Fixed Service), back in 1963 when the FCC reserved it for broadcasting instructional TV in classrooms. But teaching with TV never really took off, so to spur use of that part of the spectrum, the FCC let license holders lease “excess” bandwidth to commercial broadcasters — with the allowed portion growing to 95 percent of each license by the mid-1980s. “We’re looking at a public asset, designated to do public good, and in the end, it’s mostly just generating private profit.”

While some license holders leased their spectrum in the 1980s and ‘90s, the market for it remained somewhat sluggish until 2004, when the FCC changed the permitted use for that part of the spectrum from television to internet and renamed it EBS. Suddenly, all those sleepy educational spectrum licenses were collectively worth $75 billion, according to an independent valuation for the FCC. As one account of the switch put it, “this spectrum real estate went from swamp land to ocean front property immediately.”

According to the FCC, in addition to enabling new modes of instruction, the newly allowed use of the spectrum set aside for broadband internet would help close the digital divide. Introducing the EBS changeover, the FCC commissioners wrote: “By these actions, we make significant progress towards the goal of providing all Americans with access to ubiquitous wireless broadband connections, regardless of their location.”

By that measure, EBS has fallen well short of its promise, according to some digital-access advocates. After the rule change, internet companies started gobbling up educational spectrum, offering big money to lease school districts’ maximum “excess” of 95 percent for up to 30 years. At the time, many cash-strapped schools lacked the technical expertise to consider their own broadband networks. It was far easier to use the money from lease payments than to use the spectrum itself.

Exact dollar figures for the deals are hard to come by, because most lease contracts are hidden behind non-disclosure agreements. However, interviews with lawyers who negotiate spectrum leases, along with tax disclosures of nonprofits with spectrum licenses and a few contracts made public in lawsuits, reveal a wide range of lease payments — from tens of thousands of dollars for a rural license to millions of dollars for spectrum in a major city.

Some EBS licensees are using EBS to build broadband systems in underserved areas that are being used to teach students and provide broadband service to students and their families at home. Two prominent examples of such systems were featured in WIRED magazine (see attachment) operated by Northern Michigan University in the Upper Peninsula of Michigan and the Kings County Superintendent of Schools in Kings County, California. (Berdik 2017).
Digital Redlining In St. Louis

Each EBS license holder in St. Louis should do all they can to promote K-12 digital inclusion and equity in St. Louis. There are five EBS licensees in the St. Louis region that serve Missouri and Illinois:

- Education Plus
- Innovative Technology Education Fund
- KETC NineNetwork
- Missouri Baptist Hospital
- St. Louis Community College

In 2001 Attorney General Jay Nixon, appointed Project Appleseed president Kevin Walker to the board of Innovative Technology Education Fund (ITEF), formerly known as “HITEC” Mr. Walker served on both the board and advisory board for over 15 years. Mr. Walker was one of the three board members who negotiated ITEF’s 30 year lease.

ITEF is a private foundation and the only license in St. Louis not attached to a public institution. This has become a problem. The foundation takes a minimalist approach and only does what is necessary to meet minimum EBS and IRS requirements and still bank the millions in funds from its lease. Under stable leadership today, board infighting for control of the foundation’s funds, jobs and focus led to high board churn in the last four years. As longtime board members departed, the foundation lost its institutional knowledge and the desire to build broadband capacity for the underserved in the St. Louis region.

The foundation’s grant programs fund schools in STEM and professional development. While 90% of Missourians send their children to public schools, in recent years 50% of grants went to private schools. The vast majority of the schools funded serve families that are white, wealthy and already connected to the Internet. To our knowledge, ITEF has never funded grants for Normandy and Riverview Gardens where 98% of families are black. The foundation believes that FCC regulations state that only accredited schools can receive support from an EBS license. Paradoxically, Normandy and Riverview Gardens were both unaccredited for much of the last nine years, but they are part of the consortia of school districts - EducationPlus - that hold an EBS license. All the districts in the consortia are beneficiaries of its lease.

Federal Communications Commission, Chairman Ajit Pai, in his “Digital Empowerment Agenda” address in Cincinnati, Ohio, on September 13, 2016, “My friend David Honig, President Emeritus of the Multicultural Media, Telecom and Internet Council, has called the failure to build out broadband infrastructure to some neighborhoods on the same terms as others “digital redlining.” The consequences of leaving low-income communities behind has serious consequences. It impedes economic development and professional opportunities (imagine having to apply for a job that only takes online applications). It reduces educational options for the students who live there. And it makes it harder for people to stay connected with the wider world around them.”

It would appear that ITEF has digitally redlined at least two all black public school districts, raising equal protection issues and possible violations of the Communications Act, Civil Rights Act and the Americans with Disabilities Act (ADA). These legacy issues and others beg for outside review.

Project Appleseed is advocating for the reform of EBS by demanding that the FCC take action to ensure that EBS delivers the public benefit that was promised when the licenses were gifted to nonprofit and education institutions. EBS licensees can begin by answering simple questions about the value and utilization of their commercial lease arrangements, and by clearly explaining how they quantify the proportionate digital inclusion and educational benefit delivered to the public. EBS has not met its original promise and leaders in the digital equity community have sounded the alarm. Zach Laverenz, the former CEO of EveryoneOn, a national nonprofit working to eliminate the digital divide, posted a transparency challenge to EBS board members and advisory board members on the National Digital Inclusion Association listserve in February of 2016.
“Please be informed about EBS spectrum licensing and demand that the FCC take action to ensure it delivers the public benefit when the licenses were gifted to nonprofits and education institutions, nearly 50 years ago…. EBS leasing is a scam. It is at best a gross underutilization of a public asset and at worst a perverse misuse of a public asset for private benefit.”

Because of the lax oversight by the FCC over EBS licenses, it is clear that EBS is in dire need of reform. Based on publicly available information, ITEF has donated $3 million to schools in 10 years - approximately 30% of its income. In the same time the foundation has amassed a fund balance in excess of $5 million - all of which is invested in stocks and bonds - not broadband for underserved students and their families. Guidelines by the Better Business Bureau and the Charities Review Council say that groups spending less than 70 percent of their revenue on mission-directed expenses need a very good reason (Berdik 2017). This is an example of the gross underutilization of a public asset for private benefit. Project Appleseed seeks to implement two recommendations:

- ITEF and its EBS license should be placed under the control of the Missouri State Board of Education and under the direct supervision of the Commissioner of the Missouri Department of Elementary and Secondary Education (DESE) by the end of 2018. DESE can engage the technical expertise of the Missouri Research and Education Network (MOREnet) to expand use of ITEF’s broadband license to promote digital inclusion and equity in St. Louis. The Missouri Research and Education Network (MOREnet) is a member driven consortium serving Missouri’s K12 schools, colleges and universities, public libraries, state and local government, teaching hospitals and clinics and other affiliate organizations. MOREnet, which operates as a separate business unit within the University of Missouri. DESE should re-brand ITEF as the “Inclusive Technology and Education Fund”

- The FCC should demand that all EBS licensees make public quantifiable utilization of EBS licenses for digital inclusion, and do so in proportion to the value of the immense lease payments they receive from Sprint. The FCC can also insist on these kinds of simple EBS disclosures within the existing regulatory compliance structure for EBS licensees.

ITEF is inaccessible to poor families and schools in St. Louis. It is neither innovative, radical nor revolutionary. EBS licensees are charged with being responsible custodians and stewards of a public asset and to maximize its impact for those Americans it was intended to benefit. Sprint is the primary beneficiary of a huge public asset, a spectrum band worth ~$75 billion - according to Wired magazine, which Congress allocated to deliver education and public benefit.

CTEF does a good job of model programing ITEF must adopt. The FCC says that a good example of an effective technology foundation is CTEF - the California Emerging Technology Fund. While not an EBS licensee, CTEF does a good job of model programing ITEF must adopt. CTEF an independent non-profit organization, was established in 2005 pursuant to the mergers of AT&T, SBC, Verizon and MCI. The California Public Utilities Commission ordered the merged companies to contribute $60 million to CETF over five years to promote broadband deployment and adoption. CETF was organized to attract matching funds from other non-profits, foundations, corporations, and government stakeholders, with a goal of raising an additional $40 million to accompany the merged entities’ initial investment. (California Emerging Technology Fund, 2016)

CETF takes a five-pronged approach to the digital divide by:

1. engaging local leaders to integrate digital inclusion into strategic plans for addressing local challenges;
2. making grants to community based organizations and public agencies;
3. participating in regulatory proceedings and supporting federal and local public policy that promotes broadband adoption;
4. increasing awareness among underserved communities about the benefits of broadband; and
5. partnering with non-profits, governments, companies, and foundations to invest in major broadband adoption initiatives.

To date, CETF has been able to match its grants four-fold—with grantees receiving $112 million in matching funds. Notably, CETF grantees have provided digital literacy training to more than 800,000 Californians and helped more than 250,000 households get online. As of 2016, 74 percent of California households earning $40,000 per year or less report having broadband at home—up from 33 percent in 2008.
St. Louis Digital Inclusion Summit

Mapping St. Louis Regional Inclusion Programs

Project Appleseed will work to bring together the St. Louis Digital Inclusion Summit based on the success of the Kansas City Coalition for Digital Inclusion. In April of 2018, community and major thought leaders on the opportunities and challenges of digital inclusion, will meet to explore issues to improve connectivity and public access in our community. The KC organization is an open, collaborative group of Kansas City area nonprofits, individuals, government entities and business focused on fostering internet access and digital readiness in greater Kansas City. Membership meetings occur on a monthly or bi-monthly basis at the Kansas City Public Library.

Prior to the summit, Washington University graduate students in Social Work will survey city and county leaders to determine who are the key stakeholders in St. Louis’ digital inclusion community. The same list of stakeholders will be used to map the St. Louis community’s resources. To begin the process we will survey state and elected officials first to discover answers to the following:

1. Does your municipal government have at least one full time-equivalent staff dedicated to digital inclusion policy and programs, and supported by the municipality’s own revenue rather than third-party grant funding?

2. Does your municipal government convene, and/or materially support, an ongoing digital inclusion planning process for your community?

3. Do officials of your municipal government participate actively in a local digital inclusion coalition?

4. Does your municipal government regularly conduct and publish research on Internet access and use by your residents?

5. Does your municipal government directly fund community digital inclusion programming, i.e. digital literacy training and/or assistance to residents in getting home Internet access?

6. Does your municipal government directly fund one or more public access computer labs?

7. Does your municipal government provide material support to a public or community wireless network deployed in one or more residential neighborhoods, and offering Internet access to residents where they live?

8. Does your municipal ISP provides a discounted rate, or other special affordability option, for home Internet service to disadvantaged residents? (This indicator only applies to cities and towns that are Internet Service Providers, i.e. operate municipal networks.)
Project Evaluation

**Research Design.** An evaluation will be developed with the Harvard Family Research Project at Harvard University. At all times, Project Appleseed will employ a rigorous mixed method of design, using both qualitative and quantitative data. Examination of the school communities that take part will enable conclusions to be reached about the impacts of community organizing on family engagement. This research will be carried out in a collaborative process with the schools, libraries and community groups themselves, enabling the sharing of preliminary findings at each state of analysis, so that the intimate knowledge of the work and of the school, district, and community contexts can inform the interpretation and understanding of the data. (Mediratta, et.al. 2009)

1. **The project evaluation has a clear understanding of implementation and intermediate outcomes of success**

**Expected Interim outcomes:**
- a. Improved student work habits and motivation
- b. Increased school attendance
- c. More enrollment in more challenging courses
- d. Smoother transitions across schools and grades
- e. Increased student achievement
- f. Decreased likelihood to engage in high risk behaviors.

**Long-term impacts on schools and student educational outcomes:**
- a. Engagement is helping to expand the capacity of schools to provide a successful learning environment,
- b. Engagement is contributing to higher student educational outcomes, organizing is helping to expand equity and school capacity in historically underserved communities through targeted district- and state-level policy and resource interventions.

**Long-term impacts on parent involvement, civic engagement, and educational aspirations:**
- a. Adults involved in community organizing report greater parent involvement in schools, civic engagement, and knowledge and investment in education issues.
- b. Young people involved in organizing report increased knowledge of education issues facing their schools and school systems and intend to sustain their political and civic engagement over the long term.
- c. Young people involved in organizing report increased motivation to succeed in high school and enter college.

2. **The project evaluation will provide sufficient information about key elements. The Learning@Home study will be guided by several central questions:**

Does the new responsiveness and/or collaboration generated by community-based efforts to engage parents lead to new priorities and capacities within schools and communities that can facilitate successful learning for all children?

How can federal, state, and local stakeholders leverage existing and emerging legislation and programs to create systemic family engagement?

How can educators and other stakeholders use student performance data to connect families and schools in meaningful ways?

Does the effort to equalize power dynamics - the core of the organizing approach - change the nature of accountability and quality of engagement between schools and communities?
Qualitative Data Sources: Interviews – These include interviews with key stakeholders: organizing staff, parent and youth leaders, and educators. Observations – There will be observations of meetings, training sessions, negotiation sessions, and public actions, leader development and organizer development trainings. Document Review – A complete review of the materials produced by the Learning@Home will be conducted, including newsletters, organizational charts, and training materials. Context Review – Extensive background research on the local and state context for each school community will be performed, such as following local media coverage of education issues in all of the sites. These articles, combined with the interview data, provide a picture of the shifting context for reform in each site.

Quantitative Data Sources: Adult Member Surveys – A survey of adult members will be conducted to probe member participation in engagement activities, as well as member perceptions of how participation in the group has influenced their engagement with schools and their involvement in their community. Parental Involvement Pledge – Data for the 37 volunteer choices in the compact yields volunteer data that will be used to determine volunteer pattern and characteristics. Teacher Surveys – Teacher perceptions of district digital inclusion, community support and involvement in their school will be probed, as well as of their school’s climate, professional culture, and instructional core.

Public Datasets – Baseline statistical data will be used in each school zone. Data will be collected on a variety of neighborhood indicators, such as percentage of school-age children in poverty, median household income, educational attainment, and percentage of homeowners. These data will be used to analyze the contexts in which the engagement is taking place. We intend to utilize a range of publicly available teacher and student data from all schools throughout the school year. Data includes measures of teacher and student race/ethnicity, years of teaching experience, dropout rates, graduation rates, student performance on standardized tests, and a range of other variables.
Bibliography


Yet, the fact remains that too many students still scrounge for the vital internet access their classmates (and technology-enamored school reformers) take for granted. Dozens of interviews—along with reviews of tax disclosures, Federal Communications Commission filings, and court records related to EBS—show that this educational spectrum is, at least, woefully underutilized. It’s a public resource born of good intentions but wasted by a broken system.

Blindsided by Money

In 2004, President George W. Bush called for universal broadband access in America by 2007. A decade after that deadline, 34 million Americans still lack broadband access, according to the FCC. A 2015 Pew Research Center report revealed that the disconnected included 5 million households with school-aged children, who either couldn’t afford home broadband or lived in rural areas not served by for-profit internet companies.

Home broadband is increasingly a must-have for education. When students lack high-speed internet outside of school walls, the vast digital resources that promise to bridge opportunity gaps—the online tutorials, the distance learning, the troves of data and the instant feedback from teachers, mentors and peers—widen those gaps instead.

“This issue constitutes a new civil right: the right to digital equity,” concluded a June 2017 report on the “homework gap” from the Consortium for School Networking.

Angela Siefer, director of the National Digital Inclusion Alliance (NDIA), whose listserv Leverenz e-blasted, said the “homework gap” is so stubborn because every fix thus far has been “piecemeal.” Could a more robust use of EBS spectrum be the solution? Siefer isn’t sure. It would be “a bit of an experiment,” she said. “But that’s great. We need more experiments to solve this problem, because clearly the free market has not solved it.”
With a broadband need this big and intractable, why have most people never heard of spectrum set aside for educational use? According to EBS critic J. H. “Jim” Snider, founder of iSolon.org, a nonprofit promoting technology for democratic reform, it starts with ignorance of spectrum itself. Spectrum is an immensely valuable public resource, but it’s also technical and invisible, and therefore easy to ignore.

“It would have seemed like building a rocket ship to the moon,” said Steve Rovarino, president of Red Rover, a business that helps school districts (and larger clients) create broadband networks.

“Spectrum can seem almost magical,” Snider said. “But if you could see all the information flying around you—from radar to satellite communications to the conversations on social media—it would be unbelievable.”

The EBS slice of spectrum is further obscured by a history that actually predates the internet. It started with Sputnik, the Soviet satellite program that sparked a big push to modernize American education in the late 1950s and early 60s. As part of that effort, in 1963, the FCC dedicated a portion of spectrum to spur teaching via TV, dubbing the range of frequencies ITFS (Instructional Television Fixed Service). Over the following decades, the feds gave away thousands of ITFS licenses to schools and to nonprofits that had at least a tenuous connection to education.

Then, in 2004, the FCC changed the allowed use of the educational spectrum from TV to internet, and ITFS became EBS. The commissioners reiterated the spectrum’s public purpose in their written introduction to the switch from broadcast TV to internet use. They stressed the enhanced educational potential of EBS, including the need to help bridge the digital divide: “By these actions,” they wrote, “we make significant progress towards the goal of providing all Americans with access to ubiquitous wireless broadband connections, regardless of their location.”

At the same time, opening the frequencies to internet use caused the underlying value of EBS spectrum to skyrocket. And now the market worth of these licenses mattered a great deal because, since the 1980s, the FCC had allowed license holders to lease up to 95 percent of their spectrum to commercial operators. That allowance—initially spurred by the sluggish use of instructional TV—continued even as the spectrum and its educational stewards hurtled into the booming internet era.

Suddenly, commercial internet providers, notably Clearwire (later bought by Sprint), were offering school districts and nonprofits big bucks to take control of the spectrum licenses many districts scarcely knew they had.

“Licensees got blindsided by a bunch of money,” said Kevin Walker, founder and president of Project Appleseed, a nonprofit that fosters family engagement with schools, and a former board member of the Innovative Technology Education Fund (ITEF), a St. Louis-based EBS license holder. Recalling ITEF’s decision to lease its spectrum rather than use it, Walker said, “we weren’t sophisticated enough.”

Indeed, while several pioneering districts have recently found ways to use EBS spectrum for their own broadband networks, and to connect students off campus (see our earlier story about Albemarle County, Virginia) through lower-cost network hardware and partnerships with local municipalities, such a project would have overwhelmed most license holders a decade ago.

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As a result, about 90 percent of the approximately 2,400 EBS licenses have been leased to some extent, and the bulk are leased for 30 years, according to the national association of EBS license holders.

The details of these leases are secret, cloaked by nondisclosure agreements. But the few contracts that have leaked into the public domain, through court proceedings and interviews with lawyers who negotiated the leases, indicate that annual cash payments range from tens of thousands of dollars for a rural license to millions of dollars for spectrum in a major city.

Meanwhile, the two main regulations meant to tether leased spectrum to its intended educational use—a rule that 5 percent of spectrum must be held back from a lease and a requirement for 20 hours of educational use per week—were crafted for TV broadcasts and make very little sense for the internet.

Five percent of the typical EBS spectrum allotment is too small to be useful for broadband. Likewise, while 20 hours of television programming is easy to track, it’s unclear what it means to use a broadband network for 20 hours. Are students using the internet while they are logged on to a school’s learning management system or the entire time they’re reading an online document, or only when downloading something or clicking to a new page?

**A Public Good, or a Revenue Stream?**

A central issue when granting private use of a public resource is assessing the public benefit. School districts presumably put spectrum payments to good use. But, whether the EBS license holder is a school or a nonprofit, the secrecy of lease contracts makes it impossible to tabulate the public good gained from giving spectrum licenses to schools and educational nonprofits to begin with—spectrum that’s valued as high as $75 billion.

While most EBS license holders control just one or two licenses, a few nonprofits—including the two groups targeted by Leverenz, Mobile Beacon and Mobile Citizen—have amassed a national network of spectrum over the years.

Mobile Beacon is an offshoot of the North American Catholic Education Programming Foundation (NACEPF), which gathered its 52 spectrum licenses in the late 1980s and early 1990s to deliver a range of instructional and religious TV programming to schools. Mobile Citizen is a division of Voqal, a network of five nonprofits that likewise accumulated a nationwide holding of 11 spectrum licenses to broadcast free educational television to schools.

Shortly after the EBS conversion, in 2006, the two nonprofit groups jointly signed a 30-year lease of their spectrum with Clearwire/Sprint in return for cash payments and “free educational accounts” with unlimited data on the commercial network. As usual, the terms are confidential, but 900 tax forms show several millions of dollars in annual royalty payments to both entities. And court records reveal a combined allotment of around 70,000 free accounts, which Mobile Beacon and Mobile Citizen typically pass on for $10 per month to low-income people. The end users of these accounts include not only students, but also seniors, the disabled and others served by a variety of nonprofits, such as PCs for People, College Unbound and Feeding America, with whom Mobile Beacon and Mobile Citizen partner and split the fees.

Mobile hotspots that can connect a whole household’s devices are often provided with the low-cost accounts, so the number of people helped likely stretches into the hundreds of thousands.

Leverenz questions why the EBS license holders should turn “free educational accounts” into a revenue stream, but the more salient issue for him is how the nonprofits use the millions of dollars in spectrum royalties at a time when millions of American students still struggle to get online outside of school walls.
“Think about the amount of pure lease payments they receive for this public asset they don’t own, which they’ve been given to steward,” said Leverenz of NACEPF and Voqal, the parent organizations of Mobile Beacon and Mobile Citizen.

Reviews of NACEPF tax disclosures from the three most-recent years available (2013-2015) show average annual revenue of about $8.2 million, and nearly all of that money is from EBS spectrum leases. But, over that span, NACEPF devoted just 17 percent of its revenue to providing broadband.

The nonprofit also spent a few hundred thousand dollars a year on charitable donations and grants to a range of churches, overseas religious missions, schools, libraries and educational groups. Since 2013, a portion of that charity money has gone to running a 150-acre farm near the NACEPF headquarters in Johnston, Rhode Island, which donates its crops to homeless shelters.

Katherine Messier, executive director of Mobile Beacon, said her organization wants to use its EBS licenses not only to provide internet access to families with school-aged kids, but to enable “lifelong learning” as well. “Addressing the homework gap is a very noble goal and one we’re involved with, too,” she said, “but it doesn’t mean that people living in poverty without children, or seniors, or disabled populations don’t need the same access.”

However, most of NACEPF’s EBS money, a whopping 76 percent of their annual revenue over the three years examined, didn’t go to any causes whatsoever. Instead, most of that money was plowed into savings and investments totaling about $50 million as of 2015.

“They are banking the money,” said Walker, echoing criticisms leveled in Leverenz’s late-night email, which Walker dubbed “his Jerry Maguire memo.” Reading that email, Walker said, “was like somebody from the inside saying, ‘Everybody wake up! This isn’t working right!’ ”

While there’s nothing illegal about a nonprofit squirreling away three-quarters of its money, guidelines by the Better Business Bureau and the Charities Review Council say that groups spending less than 70 percent of their revenue on mission-directed expenses need a very good reason. Messier claims she has one—insurance.

“If our lessee did not fulfill its obligations, or there was some kind of dispute that stopped us from being able to provide service, we need to be prepared to go out and create that network, and use our spectrum to do that,” said Messier. “Even with the capital we have, we still wouldn’t be able to fully replicate the current network in terms of service. But we need to be prepared.”

Like NACEPF, the five Voqal nonprofits behind Mobile Citizen get most of their revenue, $6 to $7 million a year, from spectrum cash royalties and from fees they charge for the free educational accounts they get in their deal with Sprint. While the Voqal nonprofits do put the bulk of their money into mission-directed expenses—nearly three-quarters of total EBS revenue on average from 2013 to 2015—supplying broadband service accounted for only about 20 percent of that spending.

About 10 percent of the spending went to the educational television Voqal still provides. But nearly 70 percent of the spending went to grants and donations to an array of education, media, and social-justice causes, plus contributions to progressive political groups such as Common Cause and the Proteus Action League, which puts money into ballot initiative campaigns about everything from campaign finance to the death penalty.

“Whether or not you think nonprofits should be investing in political causes, they’re still not doing enough with this public asset they’ve been given to steward,” Leverenz said of Voqal. Snider, of iSolon, said that, by making such wide-ranging use of EBS royalties, Voqal is acting as if the spectrum belongs to them when it doesn’t. He notes that the law “is very clear that the licenses belong to the public. The license holders would love to pretend otherwise, but it just isn’t so.”

Answering questions by email, Voqal’s president and CEO, John Schwartz, replied, “Our programs are often aimed at the root causes that bar access to knowledge. … To use the resources afforded to us by our contracts only to provide free accounts and thus make a larger dent in the digital divide wouldn’t address the issues that create the divide in the first place.”

In a separate phone interview, Schwartz added, “I understand that outsiders might write our budget differently or have different priorities. But, I think we’re doing a good, sedulous and heartfelt job.”

The Rocket Ship to the Moon

There are lots of ideas for fixing EBS. Snider of iSolon said the FCC could reclaim leased EBS licenses when they expire and reallocate them, although he can’t imagine them taking such a bold step. The FCC could also issue new spectrum licenses for the rural areas not yet covered by EBS, under the condition that license holders use the spectrum for public purposes rather than lease it. The national association of EBS license holders sent the FCC a proposal along these lines in 2014, but the agency has not formally responded. (The FCC also did not respond to five requests, by email and by phone, over several weeks, seeking comment on this story.)

As for the current leases that dominate EBS, Leverenz said that the FCC could do a lot to “correct the shadiness in the system” just by clarifying the vagueness of legacy rules tying EBS to its original mission—such as defining what 20 hours per week of educational use means and ensuring that the 5 percent of spectrum “reserved” from the leases is actually used for educational purposes.

In fact, Voqal petitioned the FCC to update and strengthen those two requirements, calling them “convoluted” and “murky, at best” in a 2015 filing that alleged “EBS is not currently living up to its envisioned potential as a force in the development and support of education.”

The FCC has repeatedly declined to strengthen, clarify or update these rules, replying to one such petition by writing that “the best course is to rely on the good faith efforts of EBS licensees to meet these requirements.”

Perhaps the most straightforward EBS reform would be the one with which Leverenz concluded his scathing email blast to NDIA members—“We must demand EBS spectrum transparency now.” As long as the majority of EBS spectrum is tied up in long-term leases, he argued, the public deserves a full account of the educational and social benefits produced in exchange.

“We’re looking at a public asset, assigned to do public good,” he said. “How can we get it to work for its intended purpose? How can we bring it out from the shadows? We need to create accountability.”

This story was produced by The Hechinger Report, the nonprofit, independent news organization focused on inequality and innovation in education. Sign up for their newsletter.
Still in its early stages, this ambitious project relies on a little-known public resource — a slice of electromagnetic spectrum the federal government long ago set aside for schools — called the Educational Broadband Service (EBS). Some internet-access advocates say EBS is underutilized at best, and wasted at worst, because loose regulatory oversight by the FCC has allowed most of the spectrum to fall into the hands of commercial internet companies.

The resulting spectrum scarcity may be the most daunting of the legal, technical and monetary challenges faced by any district hoping to create its own broadband network. But a few pioneering districts have shown that it’s possible, and Albemarle County has joined a nascent trend of districts trying to build their own bridges across the digital divide.

“Five percent is nothing. It should be at least 50 percent,” said Kevin Walker, founder and president of Project Appleseed, a nonprofit that fosters family engagement with schools, often with the help of technology. Indeed, for setting up broadband networks, virtually nothing can be done with 5 percent of licensed spectrum; it’s not enough bandwidth to sustain the necessary high-speed data traffic.

Chris Berdik, Business, June 12, 2017

THE FLOOR-TO-CEILING GLASS wall between the high-tech fabrication lab and the hallway at Monticello High School in Albemarle County, Virginia, is meant to showcase the hands-on, self-directed learning done there.

“I give the kids access to all the tools pretty much right off the bat,” said Eric Bredder, with a sweeping gesture taking in the computer workstations, 3-D printers, laser cutters and milling machines, plus a bevy of wood and metalworking tools that he uses while teaching computer science, engineering and design classes. But Bredder can’t give students the tool he considers most indispensable to 21st-century learning — broadband internet beyond school walls.

“This is an equity issue,” said Bredder. “If some kids can go home and learn, discover and backfill information, while other kids’ learning stops at school, that’s a huge problem.”

Whether it’s used for homework-assignment web searches, streamed video tutorials, educational apps or collaborative multimedia projects, fast internet at home is rapidly turning into a necessity for America’s students. Yet, according to a 2015 report by the Pew Research Center, about five million households with school-aged children are mired in the so-called homework gap, because they can’t afford broadband or they live in underserved rural areas, such as the expanse of farms and hillside vineyards of this Virginia district spreading south from Charlottesville to the small town of Scottsville along a bend in the James River.

In places like Albemarle County, where school officials estimate up to 20 percent of students lack home broadband, all the latest education-technology tools meant to narrow opportunity and achievement gaps can widen them instead. So, rather than wait for reluctant commercial internet providers to expand their reach, the district is trying an audacious solution. They’re building their own countywide broadband network.

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Vince Scheivert, chief information officer for the county’s schools, is leading the network build-out. “All our students should be provided with the same tools to be successful in today’s world,” he said. “We don’t decide which students get textbooks based on their address, so we shouldn’t do that with digital access.”

Towers are critical parts of the broadband network, but they’re expensive (a new tower can cost $100,000 or more to erect), and getting the permits can be tricky, too. So, before the build-out began in 2014, Scheivert made a deal with the county’s emergency services providers, which have several towers for communications: If the schools could use the towers, then the police, fire and EMS departments could use the school district’s broadband in remote areas and in places where large crowds swamp commercial wireless networks.

One site in this partnership needs a new tower, and the others require extensive permits. Scheivert and his team also plan to build towers at a few schools. In the meantime, they have been testing the reach and reliability of the Carters Mountain signal, while also creating the network’s backbone — burying 12 miles (of a planned 85 miles) of fiber-optic cable to ferry huge amounts of high-speed data between school-based transmitters, receivers and servers, and regional data hubs.

“All without internet, these kids are now disadvantaged two ways, and that opportunity gap grows even more.”

The final link in the network will be the “client units,” or outdoor routers — one for every household with students — that will pick up internet from the towers and connect to school-issued computers (and only to school computers), free of charge.

Scheivert’s goal is to build the network without new money from taxpayers, and so far he’s been successful. While the federal government awards billions of dollars annually to get schools and libraries online, through its E-rate program, Albemarle’s project is technically ineligible for that because it’s “off campus,” even though it will be an extension of the school network with all its security, filters and firewalls.

Funding aside, at first Scheivert and his team had trouble even finding a hardware manufacturer willing to do business on such a small scale. “The Ericssons of the world and the Motorolas wouldn’t return our calls,” he said. Eventually, however, they found companies willing to do business with them, including Huawei in China and Florida-based Airspan Networks.

Those companies have found a ready market among the small but growing number of schools and communities giving DIY broadband a try. Among the other pioneers is Northern Michigan University’s chief technology officer, David Maki, who has spent the last few years partnering with districts and local governments in the state’s remote Upper Peninsula to expand a broadband Educational Access Network from town to town. And in California’s rural Central Valley, Jerry Waymire, the assistant superintendent for information technology for the Kings County Office of Education, has spearheaded construction of a broadband network in several districts, including Corcoran Joint Unified. The Corcoran superintendent, Rich Merlo, credits the off-campus broadband with fueling an ed-tech transformation that’s coincided with a drop in suspensions, fewer failed classes, better standardized test scores and higher graduation rates.

“We can extend the learning day. We can flip the classroom. We know kids can be more efficient in their work, and access information wherever they are,” said Merlo. “There’s been a real positive change in the culture.”

Leased Out

Of course, towers, base stations and routers are nothing without a license to beam all that data through a sliver of the electromagnetic spectrum. The Federal Communications Commission (FCC) divides up the spectrum into allowable uses, such as for TV, radio, satellites and mobile data. Nobody can own spectrum, but they can get a license to use specific frequencies, which the FCC grants by geography. That’s why, for example, 92.9 FM is alternative rock in Boston, sports talk in Atlanta and classic hits in Tulsa.

With skyrocketing demand for bandwidth and mobile coverage, internet companies have been leasing over millions of dollars for spectrum licenses when the FCC occasionally auctions them. And yet, decades ago, the FCC granted thousands of spectrum licenses — free — to educational entities nationwide, including Albemarle County schools, for a range of frequencies now known as the Educational Broadband Service. Most EBS license holders, however, can’t use their portion of spectrum the way Albemarle County has. Explaining why requires some history.

The EBS spectrum was first called ITFS (Instructional Television Fixed Service), back in 1963 when the FCC reserved it for broadcasting instructional TV in classrooms. But teaching with TV never really took off, so to spur use of that part of the spectrum, the FCC let license holders lease “excess” bandwidth to commercial broadcasters — with the allowed portion growing to 95 percent of each license by the mid-1980s.

“We’re looking at a public asset, designated to do public good, and in the end, it’s mostly just generating private profit.”

While some license holders leased their spectrum in the 1980s and ‘90s, the market for it remained somewhat sluggish until 2004, when the FCC changed the permitted use for that part of the spectrum from television to internet and renamed it EBS. Suddenly, all those sleepy educational spectrum licenses were collectively worth $75 billion, according to an independent valuation for the FCC. As one account of the switch put it, “this spectrum real estate went from swamp land to ocean front property immediately.”

According to the FCC, in addition to enabling new modes of instruction, the newly allowed use of the spectrum set aside for broadband internet would help close the digital divide. Introducing the EBS changeover, the FCC commissioners wrote: “By these actions, we make significant progress towards the goal of providing all Americans with access to ubiquitous wireless broadband connections, regardless of their location.”

By that measure, EBS has fallen well short of its promise, according to some digital-access advocates. After the rule change, internet companies started gobbling up educational spectrum, offering big money to lease school districts’ maximum “excess” of 95 percent for up to 30 years. At the time, many cash-strapped schools lacked the technical expertise to consider their own broadband networks. It was far easier to use the money from lease payments than to use the spectrum itself.
Exact dollar figures for the deals are hard to come by, because most lease contracts are hidden behind non-disclosure agreements. However, interviews with lawyers who negotiate spectrum leases, along with tax disclosures of nonprofits with spectrum licenses and a few contracts made public in lawsuits, reveal a wide range of lease payments—from tens of thousands of dollars for a rural license to millions of dollars for spectrum in a major city.

By the time educators realized how critical off-campus broadband access was for students and how slowly commercial internet providers were bringing service to low-income and rural communities, it was too late. The vast majority of existing EBS licenses were locked up in long-term leases, many of which don’t expire until the 2030s.

“We’re looking at a public asset, designated to do public good, and in the end, it’s mostly just generating private profit,” said Zach Leverenz, founder of EveryoneOn, a nonprofit that provides low-cost internet, computers and digital literacy courses.

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From the outset, the FCC had also required these leases to ensure a small amount of “educational use” of the spectrum. While the rule — 20 hours a week per channel — made some sense for TV programming, it’s unclear how hours of internet “use” should be calculated. (Would 20 hours of one student logged into Google Classroom, or 20 students logged in for one hour, suffice? Are teachers “using” the resource when they’re reading email and typing responses, or just when they hit send?)

The FCC did not return emails and phone calls requesting an interview for this article. But the commissioners have previously rejected petitions to increase the 5 percent reserve or to clarify the educational use rule, explaining that they simply “rely on the good faith efforts of EBS licensees to meet these requirements.”

Many leases arguably satisfy the educational intent of EBS by providing money for teachers and other school expenses and by giving license holders some free internet accounts on the commercial service. There’s no way to keep tabs on any of this, however, due to the nondisclosure agreements.

While much of the EBS spectrum will be controlled by commercial internet providers for the next two decades, there are exceptions. Some early leases were for just 10 or 15 years, for instance, and will expire soon. And a number of lease holders fell prey to economic realities—the company that had leased Albemarle County’s spectrum, for example, struggled in the great recession and had to back out of the deal in 2012.

Finally, there are still many remote areas of the country where no EBS licenses have ever been issued. That’s how spectrum was found for broadband in Michigan’s Upper Peninsula and in Kings County, California. For now, however, gaining access to that spectrum requires a lengthy, cumbersome and potentially expensive application for a special waiver from the FCC, which stopped issuing new educational spectrum licenses in the 1990s. To qualify for the waivers, the spectrum must be used entirely for education and, importantly, the license cannot be leased. In 2014, the national association of EBS license holders sent the FCC a proposal to make a public inventory of available spectrum, and then gradually open it up for applications from school districts and nonprofits. The FCC has yet to officially respond.

Digital Disadvantage

Back in Albemarle County, Scheer and his team plan to hand out the first shipment of nearly 1,000 routers as soon as they arrive from their Chinese manufacturer, hopefully before the end of this school year. First served will be folks who live within range of Carters Mountain, including several families with kids at Monticello High School and Walton Middle School, located about halfway between Charlotteville and Scottsville.

Seven years ago, Walton was the first school in Albemarle County to give every student a laptop. Textbooks have given way to Google Classroom and the Blackboard Learn management system, and lessons are assigned, submitted and assessed online. There are classroom Twitter and Instagram feeds through which teachers celebrate student work and post announcements for parents. The school building itself has Wi-Fi, but a recent survey found that about one-quarter of Walton students had limited or no internet at home.

Josh Walton, the school’s principal, pointed out that a big part of the internet’s promise in education is to give lower-income and rural students digital access to the academic and cultural amenities enjoyed by their more affluent, urban peers. “But, without internet, these kids are now disadvantaged two ways, and that opportunity gap grows even more,” he said.

“We don’t decide which students get textbooks based on their address, so we shouldn’t do that with digital access.”

Students without home access squeeze in a little more time online whenever possible, sometimes by skipping lunch to camp out in the school library, or by cannibalizing a half-hour period at the end of each day called “tutorial,” meant for kids to get help in tricky subjects. Every fall, students are shown how to download assignments from Blackboard before they leave school, so they can complete them offline at home and then upload them again the next day.

But those workarounds can be stressful, acknowledged Marie Vinel, who teaches Spanish part time and has two kids at Walton. “I know I can’t assign homework that is internet-based,” she said. “It just wouldn’t be fair.”

Another Walton parent, Selena Garcia, takes her seventh-grade son to the public library or sometimes to McDonald’s for free Wi-Fi access, even though the late-evening trips are a strain on her two younger kids. The only internet at Garcia’s house is her phone’s $45 per month data plan, which chokes off the connection speed after just five gigabytes’ use. Her kids love to read, and they want to download new books rather than re-read the paperbacks at home. Her seventh-grader wants to practice math with an app, so he doesn’t fall behind in class.

“My son gets pretty frustrated,” said Garcia, who occasionally relents and hands him her phone for math practice. “When I say, ‘OK,’ I look at him and see a little bit of ease come over him.”

Next year, Monticello High School will expand class offerings in computer science, engineering and design, and another teacher will join Bredder in the high-tech fabrication workshop.

“We’re starting to ask the kids what they want to do, and it’s having an impact,” said Bredder, who hopes the county’s broadband expansion will keep pace with the transformation of education made possible by the internet’s vast resources.

“It blows my mind when a kid comes to class and says, ‘Hey, look what I made with Blender [the open-source, online design software] or ‘Look what I programmed,’ after they went online for research and troubleshooting, and did their own thing,” he said. “That’s a pretty amazing piece of self-directed learning. And that’s what we should be setting our kids up for.” This story was written by The Hechinger Report, a nonprofit, independent news organization focused on inequality and innovation in education. Read more about the digital divide.
Connect low-income Missouri kids to the Internet

By Kevin Walker and James P. Steyer

Like so much of the world around us, classrooms and education are going digital. While we embrace new learning opportunities for millions of American children, we must also be careful that we do not unintentionally create new barriers to kids from low-income families in Missouri and other states that could make it more difficult for them to keep up in school.

In Missouri, Internet access for all is still out of reach. By some estimates, 44 percent of families in the poorest parts of Missouri lack Internet access.

Fortunately, help is around the corner for low-income households with school-aged kids to access the Internet – unless Congress stands in the way.

Research shows that kids without Internet access at home are at increased risk of falling behind. Nearly 7 in 10 teachers assign homework that requires the Internet, but 5 million households with school-aged children lack high-speed or any Internet connection.

Nationally, 30 percent of American homes lack high-speed Internet access, with low-income, minority, and rural residents the least connected, resulting in a dangerous digital have and have-not society that further exacerbates the widening inequality of opportunity here in Missouri and across the country.

In Missouri, Internet access for all is still out of reach. By some estimates, 44 percent of families in the poorest parts of Missouri lack Internet access. And the Federal Communications Commission reports that 529,000 Missouri households lack Internet access, while another 23,000 still use dial-up subscription service.

Unfortunately, some in Congress, like Rep. Austin Scott (R-Georgia), are trying to stop the FCC's progress. Rep. Scott's bill, the CURB Lifeline Act, would deny low-income children access to the critical tool of broadband. The bill, which is making its way through the House Energy and Commerce Committee now, would restrict funding for Lifeline, making it more difficult for kids to get ahead and harder for millions of eligible families to escape poverty.

In 1985, when Ronald Reagan was president, the FCC established Lifeline to offer subsidized telephone service to low-income Americans. The phone was considered essential, not optional, for helping all Americans to be connected, especially to emergency services. Today, access to the Internet is an essential service to keep pace and fully participate in our fast paced economy and educational system, certainly for students, but also for veterans, job seekers, and even older Americans.

Under the FCC's update, a low-income household can choose between continuing to receive a phone subsidy or getting instead full broadband access at home. And the modernization also makes the program even more accountable and efficient, greatly reducing opportunities for unscrupulous providers or consumers to take advantage of it.

The inability to log on from home creates a "homework gap" for low-income kids, many of whom face a series of other educational hurdles that their wealthier classmates do not.

Throughout its history, Lifeline has enjoyed bipartisan support – from Presidents Reagan and George W. Bush to President Obama. As times change, this small but critical program must evolve too. The improvements to this program will help close the gap between the digital haves and have-nots so that Missouri's kids and our economy can benefit. Congress should not reverse that progress.

Kevin Walker is President and National Director of the St. Louis-based non-profit Project Appleseed. James Steyer is founder and CEO of Common Sense Media, an independent and non-profit resource on media and technology for parents and teachers.
### Getting Schooled in Social Media

**Tweets, texts, and new apps help link schools with parents and community**

The rural district of Fall Creek, Wisconsin, has only 850 students and one school building, but it has 13,400 Twitter followers, and that's just for the superintendent, Joe Sanfelippo. A constant stream of tweets by teachers, parents, and students reaches thousands more, all united by a hashtag inspired by their diminutive mascot: #gocrickets.

This nonstop digital pep rally is about more than school spirit. Fall Creek and a growing number of schools are tapping tech to upgrade their outreach, hoping to bolster community support and spur parental engagement.

“Schools need to get better at telling the story of the good things happening in classrooms,” said Steven Anderson, a former teacher and instructional technology director who now consults with districts about venturing into social media. For instance, classroom videos posted on Facebook and Twitter could help convince parents that the school’s recently purchased computers are being used for creative and collaborative projects rather than rote practice and remedial work.

The classroom chronicles can also help parents know when to nudge their kids, according to Colleen Terrill, director of instructional technology for Mashpee, Massachusetts. Since 2015, the district’s teachers have used #mashpee on Twitter to show off student achievement and to post classroom announcements, including homework reminders.

“Parents can follow the Twitter feed, and say, ‘Don’t you have that paper due soon in social studies class?’” Terrill said.

Sanfelippo found his district’s social media rallying cry during a school field trip to Fall Creek’s history museum, where vintage banners, pennants, and pins were emblazoned “Go Crickets!”

“We just made it more modern,” said Sanfelippo. He and his staff tack #gocrickets onto photos of kindergarteners counting seeds from a freshly carved pumpkin, podcast interviews with high-achieving students, school sports results, and videos of art classes, science labs, and dance performances—cross-posted on Twitter, Facebook, and Instagram. Most posts collect a handful of likes, shares, and comments, while a few videos have gone viral—such as the Fall Creek tradition of driving tractors to school for homecoming.

“We celebrate everything,” said Sanfelippo, who promotes #gocrickets by giving away T-shirts, windshield scrapers, and other trinkets bearing the hashtag.

“As a parent, if you send a newsletter to my house, I’m not going to see it until the next morning when I’m cleaning out my kid’s backpack in a rush,” he said. “But if I can just check out that hashtag and see the cool stuff my kid is doing during the day, it makes me feel more like I’m part of it.”

Sharing student learning with frizzled parents was also the motivation behind the social media app Seesaw, launched in 2015. Students use it to create an online, multimedia portfolio of schoolwork that they can share with parents, classmates, and others in the network, who can respond with likes and other feedback, based on access controlled by teachers.

“We have a lot of parents who work two and three jobs, so it’s hard for them to visit our school for open houses, conferences, and things like that,” said Seesaw user Sophia Garcia-Smith, a second-grade teacher in a suburban Chicago school where 80 percent of students qualify for free or reduced-price lunch.

“Instead of constantly trying to tell parents in a newsletter about what their students are doing in class,” she said, “they get a front-row seat.”

Parents can sign up to receive email or text-message alerts when their children add something to their Seesaw portfolios. Sometimes, these posts give a heads up to parents that a student may be struggling with some specific lesson, according to Garcia-Smith. Other times, she said, “it’s wow, we had no idea he was capable of this.”

Yessenia Sanchez, whose son is in Garcia-Smith’s class, has had both reactions to his Seesaw portfolio. For example, she recently noticed that he was good with math but had trouble with word problems.

“One of my children was struggling with fractions,” she said. “I saw the magic of the app and shared it with my son’s teacher. The teacher was able to tell him just by looking at the example that he needed help with fractions and then she worked with him.”

Sanfelippo found his district’s social media rallying cry during a school field trip to Fall Creek’s history museum, where vintage banners, pennants, and pins were emblazoned “Go Crickets!”

“We celebrated everything,” said Sanfelippo, who promotes #gocrickets by giving away T-shirts, windshield scrapers, and other trinkets bearing the hashtag.

“Once I saw that, I thought, ‘OK, I need to sit down with him and go over the problem so he understands it,’” she said.

Within Seesaw, teachers are the feedback gatekeepers. They choose who can see student work and they must approve all written comments.

“We get a lot of smiley faces and thumbs up,” Garcia-Smith admitted. “Instead of more thoughtful feedback, she gave her class a ‘digital citizenship’ lesson, encouraging comments that ask a question, give a compliment, or offer a suggestion. This fall, she included those suggestions in a letter sent home to parents.

Stoking a lively social media conversation is no problem for the public schools of Wake County, North Carolina, a district centered on Raleigh. Wake County school officials respond promptly to every student and parent tweet about snow cancellations and delays, early-release days, and other concerns—sometimes with a bit of attitude.

According to Lisa Luten, director of communications for Wake County Public Schools, the rapid response has encouraged students to share their concerns (large and small) with administrators and teachers—from late buses to bullying to worries about the mental health and safety of their classmates.

As for communicating with students and families about things like snow days, Luten said, “A response on social media is available to everybody, so we don’t have to answer a hundred phone calls with the same question.”

Of course, keeping up with social media isn’t easy for parents without broadband internet at home, which includes nearly one-third of households with school-age children and incomes below $50,000, according to the Pew Research Center.

The broadband gap is why Kevin Walker, founder and president of Project Appleseed, a nonprofit that advocates parent and community engagement in lower-income school districts, favors outreach through the more-ubiquitous technology of text messaging.

Indeed, recent studies out of Harvard and Stanford show that timely text messages to parents—including homework and exam reminders, school attendance notifications, and suggestions for at-home literacy activities—improved student math and literacy performance.

“Ed-tech innovation can be transformative for some students, but if we keep ignoring the poor, then we end up with two different countries, and one is being left behind,” said Walker.

Anderson advises schools and districts to survey parents about their social media access, habits, and preferences. Then, he suggests they start small. “Maybe you’re already publishing a few stories a week on your school website about a new technology initiative or kids winning awards,” he said. “All we’re going to do is post that link in one more place, like Twitter. I’m looking for quick and easy ways that fit into the workflow, and aren’t a burden to teachers.”

Back in Fall Creek, school-based social media sparks conversation well beyond the digital realm, according to Sanfelippo, prompting more fruitful dinnertime questions than the dead end, “How was school?”

“Now parents can say, ‘I saw that you guys were launching rockets today,’” he said. “Tell me about that.”
Project Appleseed: Digital Equity & Inclusion: A Key Economic Opportunity and Civil Rights Issue for the 21st Century

By Karla Scoon Reid on November 19, 2013

National Parental Involvement Day, on Nov. 21, will highlight a new partnership that aims to provide low-income families with free or discounted Internet access, computers, and training to enable parents to communicate more effectively with their children’s teachers and schools.

Project Appleseed, the St. Louis-based nonprofit and founder of National Parental Involvement Day, has joined forces with Connect2Compete, a partnership of IT companies and nonprofits that connect low-income Americans to the Internet. Connect2Compete is a nonprofit organization supported by Comcast, Cox, Freedom Pop, Arrow Electronics and CDI Computer Dealers. It receives financial support from the Knight Foundation, Carlos Slim Foundation, the Wasserman Foundation, Citi, and Microsoft. Read more about Connect2Compete here.

Kevin S. Walker, the president of Project Appleseed, found a quote he gave a publication in 1994 where he boldly predicted: “Cyberspace would tie America’s parent constituency together.”

Walker added in an interview last week: “It hasn’t worked that way.”

Instead, he said poor parents have been left out as schools have adopted technology to improve parent engagement efforts, including accessing students’ grades online and communicating with teachers via email. Walker said technology also is an essential tool to recruit and organize parents. Using social media and email to connect parents to a school or to rally around a cause can quickly bolster participation.

And teachers in higher-level courses are using technology more frequently in their lessons and to communicate with their students. According to a February poll of Advanced Placement and National Writing Project teachers conducted by the Pew Research Center’s Internet & American Life Project:

- 79 percent of teachers have students access assignments online
- 85 percent of teachers seek opportunities to incorporate digital tools into their instruction

In recognition of National Parental Involvement Day, Project Appleseed is calling on parents and schools to identify families in need of free or low-cost Internet connections and computers and assist them in registering for the national program. Connect2Compete hopes to reach 100 million Americans who do not have home broadband Internet access. About 70 percent of American adults have high-speed broadband access at home, according to a May poll conducted by the Pew Research Center’s Internet & American Life Project.

Unlike the federal government’s problem-plagued health-insurance website, finding out if a family qualifies for this program is simple, just click here to start. (I tried it.)

For those doubters out there who can’t fathom that there are people who don’t know how to use a computer or don’t have access to one, simply visit a local school. My boys are in elementary school and I’ve had super tech-savvy teachers who text me during the school day and send photos of my children to me via email. Then, I’ve had others who disavow email entirely and still cut and paste—with glue and tape, not a computer mouse—their homework newsletters. True story.

Still don’t believe me? Watch how nervous and elated this first-time computer user is in this public service announcement from the Ad Council: