

# THE VILLAGE:

The Future of School Spaces and Schedules

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World Futures, Spring 2015

# 1. Domain Description

Category	Description
Domain definition <i>(subject of the forecast)</i>	School spaces and schedules have been stagnant for decades and growing dissatisfaction with the reigning school paradigm means there are many opportunities for change. What can be the future of school spaces and how learners spend their time in them? We need to help schools, educators, parents, and policymakers ask this question instead of allowing them to accept that the way it's always been done is good enough.
Client <i>(who the project is for)</i>	IDEO
Geographic scope	U.S.
Time horizon	10 years
Key issue(s) or question(s) ?	How might school schedules and spaces be designed in the future to support personalized and equitable learning?
Domain Map <i>(Boundaries, Categories, What's in &amp; What's out)</i>	<p>WHAT'S OUT: Local funding, hiring and firing practices, standardized testing</p> <pre> graph TD     SS[School Structures] --- Spaces     SS --- Schedules     SS --- Educators     SS --- Students          Spaces --- OffCampus[Off-campus learning spaces]     Spaces --- OnCampus[On-campus learning spaces]          OffCampus --- virtual     OffCampus --- places[places of employment]     OffCampus --- natural[natural environments]     OffCampus --- community[community spaces (museums/maker labs)]          OnCampus --- new[new school construction]     OnCampus --- traditional[traditional classrooms]     OnCampus --- multiuse[multiuse learning spaces]     OnCampus --- flexible[flexible/undefined spaces]          Schedules --- individualized     Schedules --- flexible     Schedules --- extended[extended school day/year]     Schedules --- traditional[traditional school schedule]          Educators --- relationships     Educators --- roles     Educators --- definitions          Students --- mindsets[mindsets about school]     Students --- needs[educational needs]     Students --- goals[goals and desires]     </pre>

## 2. Current Assessment

Category	Description
<p>Current conditions (important facts and variables about the domain today)</p>	<p>In the minds of most school administrators, boards, and communities, the focus on school construction is on maintenance and quality. Falling enrollments, the 2008 recession, and intense focus on what’s happening inside the school instead of what the school itself is have made risk-taking in school design and construction rare. When a school or district does have an opportunity, most of the time they repair or rebuild in a way maintains the status quo of school design. At the next level, some schools build computer labs or technology-centric environments due to increased interest and pressure to do so. A select few, though, are allowing form to follow function and are trying to use design thinking and mission-drive design to start with a clean slate and create a school that works for the kids and adults who will use it.</p> <p>These same issues apply to school scheduling. The “one teacher to dozens of students scheduled in one room” dominates schools. Even schools with more innovative design ideas still tend to utilize the bell schedule and concept of “periods.” There is perhaps less innovation in this area than in school design. Some schools are experimenting with internships or cross-disciplinary project-based learning time, but any real departure from traditional school schedules is coming from a growing number of parents who feel their students’ needs are not being met. Homeschooling – or newly dubbed “hackschooling” or “unschooling” – is on the rise.</p> <p><b>What Most Schools Are Doing:</b></p> <ul style="list-style-type: none"> <li>• Almost all (99 percent) of the schools had permanent buildings, and 31 percent had portable (temporary) buildings. Among schools with permanent buildings, the overall condition of about three-quarters of the permanent buildings was described as excellent (20 percent) or good (56 percent); 21 percent were in fair condition, and 3 percent were in poor condition. Among schools with portable buildings, overall condition was excellent in 6 percent, good in 49 percent, fair in 36 percent, and poor in 9 percent. (<a href="http://nces.ed.gov/fastfacts/display.asp?id=94">http://nces.ed.gov/fastfacts/display.asp?id=94</a>)</li> <li>• Based on survey responses, 53 percent of public schools needed to spend money on repairs, renovations, and modernizations to put the school’s onsite buildings in good overall condition. The total amount needed was estimated to be approximately \$197 billion, and the average dollar amount for schools needing to spend money was about \$4.5 million per school. (<a href="http://nces.ed.gov/fastfacts/display.asp?id=94">http://nces.ed.gov/fastfacts/display.asp?id=94</a>)</li> <li>• Average Daily Attendance is a major funding source for K-12 schools. A decline in school enrollment overall has left some schools struggling with budgets, so the facilities focus is on maintenance and holding things together rather than innovation and re-construction (<a href="http://asumag.com/Construction/school-construction-trends-201105?page=3">http://asumag.com/Construction/school-construction-trends-201105?page=3</a>)</li> <li>• Before the recession, new school construction was a \$20 billion industry. As of 2011, it was \$12 billion. That said, school renovation and construction is still the top non-residential buildings market. The common view among builders is: “In general, educational facilities tend to be more cookie-cutter than other, more complex project types, such as health care facilities.” (<a href="http://enewletters.constructionexec.com/techtrends/2014/03/building-educational-facilities/">http://enewletters.constructionexec.com/techtrends/2014/03/building-educational-facilities/</a>)</li> <li>• Schools struggle to schedule all of their students in the first place and give them the access to learning they need, and most do not think to re-tooling the school schedule to fit the needs of the students. Even forward-thinking schools still rely on many assumptions about school scheduling (<a href="http://www.ascd.org/publications/educational-leadership/nov95/vol53/num03/The-Power-of-Innovative-Scheduling.aspx">http://www.ascd.org/publications/educational-leadership/nov95/vol53/num03/The-Power-of-Innovative-Scheduling.aspx</a>)</li> </ul>

	<ul style="list-style-type: none"> <li>Some low-income schools are under fire for their scheduling practices, which demonstrates the difficulty of effective scheduling and increasing restrictions on how schools can schedule students' time (<a href="http://www.scpr.org/blogs/education/2015/02/06/17884/lawyers-seek-order-to-fix-scheduling-issues-at-mor/">http://www.scpr.org/blogs/education/2015/02/06/17884/lawyers-seek-order-to-fix-scheduling-issues-at-mor/</a>)</li> </ul> <p><b>What's New/Innovative:</b></p> <ul style="list-style-type: none"> <li>Some states, like California, are trying to find ways out of the traditional school construction bond route that has traditionally been used to run schools (<a href="http://www.latimes.com/local/politics/la-me-cap-school-bonds-20150119-column.html">http://www.latimes.com/local/politics/la-me-cap-school-bonds-20150119-column.html</a>)</li> <li>Some schools – mostly charters with a specific project-based learning or other pedagogical mission – are linking school design to school values and teaching methods (<a href="http://innovativeschools.org/portfolio-model-schools">http://innovativeschools.org/portfolio-model-schools</a>)</li> <li>Companies like IDEO, Stanford's d.School are entering the school design space (<a href="http://www.ideo.com/expertise/education/">http://www.ideo.com/expertise/education/</a>)</li> <li>In the design of schools, some are considering malleable, flexible environments, cross-generational spaces to increase student ownership, maker labs, open layouts without specific classrooms, etc. (<a href="http://www.bigpicture.org/2001/09/innovative-school-design-for-small-learning-communitites/">http://www.bigpicture.org/2001/09/innovative-school-design-for-small-learning-communitites/</a>)</li> <li>Most "innovative" school scheduling focuses on extended school days, not as much on re-thinking the time already available. (<a href="http://www.wallacefoundation.org/knowledge-center/summer-and-extended-learning-time/summer-learning/Documents/Reimagining-the-School-Day-More-Time-for-Learning.pdf">http://www.wallacefoundation.org/knowledge-center/summer-and-extended-learning-time/summer-learning/Documents/Reimagining-the-School-Day-More-Time-for-Learning.pdf</a>)</li> <li>A few schools are looking to interdisciplinary time, built in time for community engagement and project creation (<a href="http://blogs.kqed.org/mindshift/2015/01/why-even-good-schools-benefit-from-trying-fresh-ideas/">http://blogs.kqed.org/mindshift/2015/01/why-even-good-schools-benefit-from-trying-fresh-ideas/</a>)</li> <li>Growing numbers of parents are finding that traditional school is not the right fit for their students and are educating them at home. Some schools allow students to attend part-time as their educational needs require, and other organizations (museums, online schools, etc.) are trying to cater to these families (<a href="http://www.wired.com/2015/02/silicon-valley-home-schooling/">http://www.wired.com/2015/02/silicon-valley-home-schooling/</a>)</li> </ul>
History (past event(s) that began the current era)	<p>Current school construction and design is based almost entirely on ideas about schools from the early 1900s, when public education came to be:</p> <p>"The history of school construction is one of careful research, standardization and calculated design. Indeed, as one professor of architecture at Columbia University in 1910 noted, "The data for the designing of public school buildings have been more completely standardized than for any other type of structure, except the American public library"(Hamlin, 1910, p. 3). School researchers and standard-setters were passionate about providing adequate school facilities for education, not only for the sake of housing learning (which was not seen as a particularly delicate task until the 1930s), but for the sake of building lasting icons of our culture, and for the communities that schools served. Another author at the turn of the century noted the values that should guide school design, saying, "[t]he school building should be simple, dignified and plain and should be built of the most enduring materials procurable; first, because this contributes to safety, permanence and endurance, and second, because the true character of the building will be best expressed through such materials"(Mills, 1915, p. 34)."</p> <p>(<a href="http://www.ncef.org/pubs/greenschoolshistory.pdf">http://www.ncef.org/pubs/greenschoolshistory.pdf</a>)</p>

School standardization was a priority for almost all educational leaders at this time, but they had different motivations. Some, like Horace Mann, saw it as a road to equity. Others, like urban school leaders, saw it as a way to bring rural areas under their control (Tyack, 1975). Finally, city leaders and urban planners needed a place to put all of the students that suddenly appeared due to increasing population size and an Industrial Revolution that took parents off the farms (where the children also worked) and into the factories.

<http://www.ncef.org/pubs/greenschoolshistory.pdf>

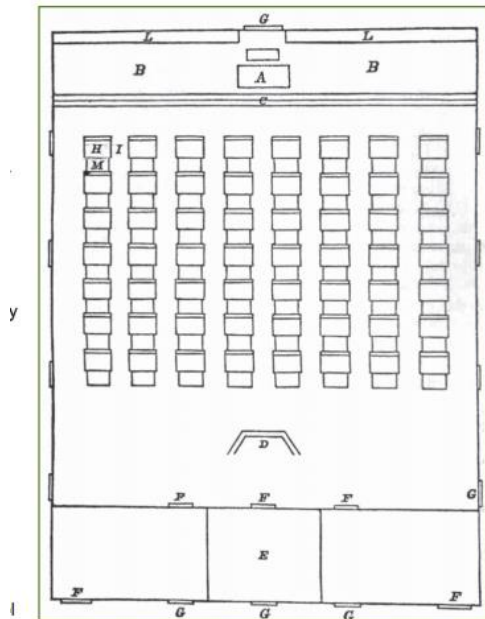


Figure 1. Horace Mann's plan for the one-room schoolhouse, 1938, from Weisser 2006

In the Progressive Era, leaders like Maria Montessori and John Dewey introduced ideas of student-centeredness, and schools began to focus more on features like large windows to let in air and light. These schools still used standard classroom design.

Post-war, school enrollments were booming along with the population and many new schools needed to be built. Most districts abandoned ornate gothic structures and went to the flat, one-story look that still characterizes many schools. Efficiency in materials began to be a consideration.

Since then, school design trends have fragmented, with different leaders and districts deciding to follow certain trends and others going a different way. Most schools still follow the principles laid out from the early days, though.

<http://www.ncef.org/pubs/greenschoolshistory.pdf>

“In the early nineteenth century, teachers typically had a limited education and were expected to function well in all subject areas. Staff at all levels taught any subject at any time of the day. In the late 1800s, the *Carnegie unit*—comprised of approximately fifty-minute class periods in which a single subject is taught, and for which teachers specialize in particular subject areas—became the most frequently used scheduling format. J. Lloyd Trump's *An Image of the Future*, published in 1958, caused schools to experiment with ungraded instruction, long periods of independent

study, and large group instruction. The plan failed, however, partly due to the large amount of unstructured, independent study time for students.

Other scheduling experiments have also failed. In the 1970s, the notion that flexibility in scheduling is beneficial to staff and students led to the Open School concept. Divisions between classrooms in elementary schools were eliminated and students were able to progress at their own speed, moving from one grade area to another. During the 1960s and 1970s, some schools modified the traditional seven-period day, breaking the day up into twenty-minute *modules* and calling the plan *modular flexible scheduling*. Neither plan took hold.

In the 1970s, with flexibility continuing to be a priority, *fluid block scheduling* became popular and successful. This scheduling pattern allots a block of two to three hours to teams of teachers from various subject areas, allowing teachers to schedule instruction according to student needs. Another flexible scheduling alternative that began in the late 1980s and continues in popularity is the *zero period schedule*. Designated courses begin an hour earlier than the regular school day, allowing some students to leave an hour earlier or enroll in an extra class.

The 1989 publication of *Turning Points*, by the Carnegie Council on Adolescent Development, brought major changes for middle-level schools. Recognizing that junior high schools were simply mirror images of high schools, the council recommended that schools be reconfigured to fit the developmental needs of young adolescents. Thus, various forms of block scheduling and interdisciplinary teaming took hold in middle schools, and later in high schools as well. With *block scheduling*, teachers are given longer periods of time—usually ninety minutes—to work with students. *Interdisciplinary teaming* is a popular arrangement where a group of teachers (usually four or five) works with 125 to 150 students, essentially creating a school within a school. Interdisciplinary units of study help students' understand the connections between subjects. Teaming is sometimes combined with block scheduling.”

<http://education.stateuniversity.com/pages/2385/Scheduling.html>

### 3. Stakeholder Analysis

<b>Stakeholders</b>	<b>Interests, goals, values, fears, positions</b>	<b>Plans, Intended actions</b>	<b>Assumptions</b>	<b>Implications</b>
1. Public schools	Though many schools are focused on general repairs or maintenance, some are beginning to understand that their spaces and schedules are not going to meet the needs of increasingly high-needs urban school populations in the 21 <sup>st</sup> century. For example, sixteen schools in Philadelphia applied to the 2014-2015 School Redesign Initiative (four	The four schools are each taking a different approach to the redesign. Some will focus on project- or inquiry-based learning, while others will focus on enhancing education with technology. From an article about the redesign: “One principal, Mary Lynskey said the	The other schools are still interested in redesigning their schools and might be open to consultation on ideas that could make them more competitive in the next round of funding OR in	There is interest in redesigning schedules and spaces, and Philadelphia schools are facing a dire need to make change to avoid being closed or converted to charters.

	<p>were chosen).<sup>1</sup> The Initiative is focused on redesigning the physical space, curriculum, technology and leadership of schools to “lead the critical work of redesigning our city’s neighborhood schools to meet the demands of the 21<sup>st</sup> century.” Philadelphia has notoriously underperforming schools and this overhaul is meant to empower the school leaders and teachers to revamp their schools to encourage higher enrollment and prevent further flight to charter schools.</p>	<p>premise of the redesign is "to remove walls and bells, to really engage the kids in what we believe to be new and exciting ways, and introduce them to anywhere, anytime learning. We want them to not just see learning as what happens in the classroom between 8:30 a.m. and 3:09 p.m." Another round of funding will be available the next school year. <sup>2</sup> In California, schools are panicked that they will not have access to state bond money to fund construction and repairs that have been necessary since the 2008 recession.</p>	<p>an opportunity to redesign without the School Redesign Initiative.</p>	
<p>2. Homeschool and entrepreneurial parents</p>	<p>Homeschooling has increased from 2.9 percent of the school-aged population in 2007 to 3.9 percent in 2011. When responding to a survey, the number of parents who say they homeschool because of religion or physical health issues has dropped, while the percentages citing dissatisfaction with academic instruction and concern about school environments have</p>	<p>The parents plan to cobble together an educational experience for their own children using online resources, museums, community organizations, and even flexible startup schools that allow students to attend part-time.</p>	<p>If public schools became more flexible, fair, and innovative, these families might consider re-enrolling or keeping their kids in public schools.</p>	<p>More engaged and influential parents could leave the public school system, further fragmenting and weakening the structure and leaving it open to demise or innovation.</p>

<sup>1</sup> <http://www.schoolredesignphiladelphia.org/>

<sup>2</sup> <http://thenotebook.org/blog/147918/four-schools-approved-redesign>

	<p>increased.<sup>3</sup> The number of tech-savvy, entrepreneurial parents<sup>4</sup> and African-American parents<sup>5</sup> are increasingly pulling their students out of public school out of concerns about the quality of education, equity of access, and the reigning paradigm of public school. They are homeschooling – or hackschooling or unschooling – their kids so they can have more diverse experiences that the parents feel will better prepare them for the workforce and allow them to be happier day-to-day.</p>			
3. Employers	<p>Employers are increasingly in need of people who can discover and lead, not just those who can carry something out and take direction. They are all trying to prepare themselves for the changing economy, and they know that education is a large part of that, but they don't always know what they want from students or schools to achieve it.</p>	<p>Startups and innovative investors have started a new education fund initiative called Education Design Studio, Inc. in partnership with UPenn School of Education. "EDSi will work with stakeholders in the investment and publishing communities and with the best providers of curriculum and programs to incubate edtech and education entrepreneurs. EDSi's singular focus on education is designed to increase the</p>	<p>Employers who participate in the fund could work with schools who they believe will better prepare students for the future workforce.</p>	<p>Employers would begin engaging in the school design process.</p>

<sup>3</sup> <http://www2.ed.gov/about/offices/list/oii/nonpublic/statistics.html>

<sup>4</sup> <http://www.wired.com/2015/02/silicon-valley-home-schooling/>

<sup>5</sup> <http://www.theatlantic.com/education/archive/2015/02/the-rise-of-homeschooling-among-black-families/385543/>



		<p>success rate for start-up and early stage ventures through a number of distinct advantages, including connecting research to practice; providing a unique funding model; providing opportunities to test start-up ideas in actual classrooms in Philadelphia, schools and corporate learning environments; and connections to the world-class Penn GSE faculty.”</p>		
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**4. Trend Analysis**

<i><b>Trend</b></i>	<i><b>Assumptions</b></i> <i>(up to three)</i>	<i><b>Implications</b></i> <i>(up to three)</i>
<p>1. Education Technology use and adoption increasing</p>	<p>1. Technology has begun to play an increasingly important role in learning, school logistics, and assessment.</p> <p>2. New startups and innovations will continue to arise in this space.</p> <p>3. Technology will allow more student data points (very targeted data about performance on standards, data on cognitive energy and performance, data to help analyze behavior patterns) to become available and readily accessible to educators and schools.</p>	<p>1. The traditional school environment and schedule could be disrupted, as education technology will begin to address more fundamental areas of the domain.</p> <p>2. The education technology space could get crowded and a bubble could burst.</p> <p>3. Privacy concerns and backlash over data tracking of students could keep schools from being able to collect and use the data.</p>
<p>2. Decreased public funding for school construction</p>	<p>1. Public school construction dollars will not reach pre-2008 levels</p>	<p>1. Widening achievement gap.</p> <p>2. Disruptive education space innovations.</p>

	<p>2. Private dollars and new solutions will fill in the gaps</p> <p>3. Equity will be a concern as private funding will not cover everyone</p>	
<p>3. Increasing numbers of students enrolling in non-traditional public schools (3% increase enrollment in charter schools from 2000-2012, and a 1% increase in homeschooling)</p>	<p>1. School environments will continue to fragment (charter schools, homeschool, blended school, online school).</p> <p>2. School choice and fragmentation will continue to be a fraught political area.</p>	<p>1. Public schools' dominance is further eroded, changing attitudes toward traditional institutions, which could affect funding</p> <p>2. New models of school emerge</p> <p>3. Divisiveness stalls innovation</p>
<p>4. Increased pressure for school performance</p>	<p>1. Common Core state standards will raise pressure on schools and teachers to reach certain standards.</p> <p>2. Disagreement over Common Core and standardized testing will continue.</p>	<p>1. If Common Core standards do not raise achievement levels (a la NCLB), common standards could be abandoned as an educational technique.</p> <p>2. Parents and teachers who are critical of the standards could choose to educate children elsewhere.</p>
<p>5. Increase in diagnoses of autism and learning disabilities; with 13% of the public school enrollees receiving special education services in 2012, up from 11% in 1990 and a 30% increase in autism diagnoses between 2011 and 2014.</p>	<p>1. Diagnoses of learning disabilities and mental health issues will continue to increase among students.</p> <p>2. Attitudes toward traditional schooling as a method for educating all students will continue to sour and acceptance of and interest in various learning styles.</p>	<p>1. Schools are unable to meet demands of diversifying student body and parents choose to educate their children elsewhere</p> <p>2. Schools adjust to meet legal and ethical requirements of changing student demographics</p>

## 5. Baseline Future

Category	Description
<p>Constants (<i>no expected change before the time horizon</i>)</p>	<ul style="list-style-type: none"> <li>Free public education will continue as an option<sup>6</sup></li> <li>Conflict between traditional public schools and reform movements will continue<sup>7</sup></li> </ul>

<sup>6</sup> <http://www.wested.org/resources/all-students-who-live-in-the-united-states-have-a-right-to-public-education/>

<sup>7</sup> <http://www.forbes.com/sites/realspin/2014/10/31/californias-toughest-and-most-important-race-who-will-be-the-states-chief-school-officer/>

	<ul style="list-style-type: none"> <li>• Pressure to increase U.S. position in global education rankings based on standardized tests will continue<sup>8</sup></li> </ul>
Trends ( <i>can say “more” or “less” of something</i> )	<ul style="list-style-type: none"> <li>• More technology and more Internet access in classrooms<sup>9</sup></li> <li>• Technology increasingly disrupts—instead of substitutes for—existing school practices<sup>10</sup></li> <li>• More mental health, autism, and learning disability diagnoses and recognition of varying learning styles<sup>11</sup></li> <li>• More opportunity for data collection in schools<sup>12</sup></li> <li>• More comfort with nontraditional schooling among parents and communities<sup>13</sup></li> <li>• Less satisfaction with traditional public schools<sup>14</sup></li> <li>• Less money available for school construction and general funding<sup>15</sup></li> </ul>
Plans ( <i>announced intentions/plans of key stakeholders</i> )	<ul style="list-style-type: none"> <li>• Less state funding available for school construction in California<sup>15</sup></li> <li>• EdTech companies working to increase usage in schools<sup>9</sup></li> <li>• Start up schools and nonprofits looking to disrupt current education models<sup>16</sup></li> <li>• Parents and students opting out of Common Core State testing and increasingly dissatisfied with public school<sup>17</sup></li> <li>• Some public schools working to create new paradigm of school design<sup>18</sup></li> <li>• Design firms see school as a new opportunity<sup>19</sup></li> </ul>
Projections ( <i>baseline forecasts made by others, if any</i> )	<p><i>School Design and Schedule</i></p> <ul style="list-style-type: none"> <li>• “Coen argues that technology will favor a gradual decentralization in cities: “Building large schools, supermarkets or hotels only leads to urban inequality. Insisting on big solutions, something typical of the industrial era, only leads to having more problems in the future. In makes no sense to build hotels in a world in which there is already Airbnb.” - OpenMind<sup>20</sup></li> <li>• “Forty years from now, America will have many more centers of educational and economic excellence spread across the continent.</li> </ul>

<sup>8</sup> <http://www.ischoolguide.com/articles/7456/20150210/study-improving-educational-outcomes-boost-economy-10-trillion.htm>

<sup>9</sup> [http://blogs.edweek.org/edweek/marketplacek12/2015/03/digital\\_promise\\_takes\\_steps\\_to\\_connect\\_14\\_education\\_innovation\\_clusters.html](http://blogs.edweek.org/edweek/marketplacek12/2015/03/digital_promise_takes_steps_to_connect_14_education_innovation_clusters.html)

<sup>10</sup> <http://government-2020.dupress.com/can-internet-things-make-education-student-focused/>

<sup>11</sup> <http://www.cbsnews.com/news/whats-behind-the-dramatic-rise-in-autism-cases/>

<sup>12</sup> <http://blogs.kqed.org/mindshift/2014/05/tracking-students-grades-minute-by-minute-help-or-hindrance/>

<sup>13</sup> [http://nces.ed.gov/programs/coe/indicator\\_cgb.asp](http://nces.ed.gov/programs/coe/indicator_cgb.asp)

<sup>14</sup> [http://www.huffingtonpost.com/2012/08/31/gallup-poll-results-show-\\_n\\_1844774.html](http://www.huffingtonpost.com/2012/08/31/gallup-poll-results-show-_n_1844774.html)

<sup>15</sup> <http://www.latimes.com/local/politics/la-me-cap-school-bonds-20150119-column.html>

<sup>16</sup> <http://4pt0.org/>

<sup>17</sup> <http://www.usnews.com/news/articles/2015/03/10/as-students-opt-out-of-common-core-exams-some-say-movement-is-not-about-testing>

<sup>18</sup> <http://www.schoolredesignphiladelphia.org/>

<sup>19</sup> <http://www.ideo.com/expertise/education/>

<sup>20</sup> <https://www.bbvaopenmind.com/en/reinventing-the-cities-of-the-future/>

	<p>This may involve a decline in the relative power of some regions...” – New Geography<sup>21</sup></p> <ul style="list-style-type: none"> <li>• “Carey envisions a future in which, ‘the idea of ‘admission’ to college will become an anachronism, because the University of Everywhere will be open to everyone’ and ‘educational resources that have been scarce and expensive for centuries will be abundant and free.’” – NPR<sup>22</sup></li> <li>• “While many recent micro-school models have come to life as home-schooling parents join forces, there’s a place for this model taking hold within any existing school—public, private, wealthy neighborhood, poor neighborhood.” – Medium<sup>23</sup></li> <li>• “Initiatives are already underway to harness the advantages of edtech-driven, curated, at-home pre-K.” –EdSurge<sup>24</sup></li> </ul> <p><i>School Funding</i></p> <ul style="list-style-type: none"> <li>• “Faced with rapidly expanding populations of the young and the old, working age taxpayers will experience the growing strain of insufficient tax revenue to fund public services from now until the foreseeable future.” – Foundation for Educational Excellence<sup>25</sup></li> <li>• “Housing developers are pushing a state bond because, without it, their share of school construction costs — passed on to home buyers — would double. School construction has been funded one-third each by local property taxpayers, developers and the state.” – LA Times<sup>26</sup></li> </ul>
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**5B. Baseline Title and Summary**

Title & 1-line description	Internet of Things=The School of Everywhere: Pervasive Connectivity Fractures Public School’s Hold Among Those Who Can Afford It
Abstract (brief narrative summary)	Startup schools, Hackschools, Homeschool groups, and even some public schools will embrace the now-entrenched Internet of Things to individualize and decentralize students’ learning experiences. Some kids will be less cordoned off “in school” and be learning in places they share with companies and organizations that benefit from the public money and enjoy the chance to help the next generation. Meanwhile, traditional public school buildings are at the mercy of their local tax bases, and those students not fortunate enough to live in one of the handful of cities with burgeoning education innovation industry are falling further and further behind.

<sup>21</sup> <http://www.newgeography.com/content/004863-the-changing-geography-of-education-income-growth-and-poverty-in-america>

<sup>22</sup> <http://www.npr.org/blogs/ed/2015/03/03/390167950/prepare-for-the-end-of-college-heres-what-free-higher-ed-looks-like>

<sup>23</sup> <https://medium.com/future-of-school/agile-in-education-an-intro-to-micro-schooling-c508c3bbc367>

<sup>24</sup> <https://www.edsurge.com/n/2015-02-22-why-the-future-of-pre-k-is-at-home>

<sup>25</sup> <http://excelined.org/facethestrain/>

<sup>26</sup> <http://www.latimes.com/local/politics/la-me-cap-school-bonds-20150119-column.html>

Key Drivers	<ul style="list-style-type: none"> <li>• The Internet of Things</li> <li>• Parent desire for education consistent with values and individualized to their kids</li> <li>• Budget pressures on new school construction</li> <li>• Co-location and sharing economy design trends</li> <li>• Continuing fragmentation of the education system</li> </ul>
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### 5C. Baseline Narrative

I quickly scanned my Morning Report. Seventy-four of my students had a solid night’s sleep and were operating at normal to above-average cognitive capacity for this time of day, so I released the day’s playlist on StudentLink. Eighteen quickly kicked it back with an authorization thumbprint from their “Co-Lo” Mentors along with what they’d be working on together that day. StudentLink confirmed their authenticity and automatically reassigned the playlist for another day and sent the reflection template to them in return. Thirty-six kids remained on my Watch list for the day. Ferrah, Alejandro, and Julian had a rough night of sleep again last night, so I pushed back their first assignment deadlines back to to 10am, 12:30pm and 1pm, respectively (the times their StudentLink profiles showed them at max cognitive capacity on days similar to these). Rex was still only working at an average of 19% cognitive capacity—with a distraction level of 12—during most of his problem solving work, so I set my schedule to block off the time he’d be working on the most challenging areas. StudentLink automatically sent an appointment notification to his mom along with his playlist. Twelve more kids were in the high-risk distraction zone, so StudentLink grouped them together and set four GroupWatch appointments.

I knew that I’d have about 20 kids at the Center today and a few were having a really rough go of it these days. One thing I miss about teaching back at regular school? Counselors. I reminded myself that Melissa’s school didn’t have funding for StudentLink, much less for a school counselor, and decided to be grateful that I at least I had the data to know what is actually going on with my students before I try to help them.

Speak of the devil. Melissa needs a lot of before-school pep talks these days.

“Just remember, it’s already March,” I told her.

“That still means three more months,” she replied weakly. I had almost forgotten how the public school calendar works. After parents were fed up with “ObamaCore,” I was recruited away.

“What are you working on with them these days?” I asked brightly, wanting to distract from her downtrodden state.

“They’re writing letters to the editor about homelessness,” she said, sounding a bit more upbeat.

“Is it going well?” I asked, imagining what my students’ parents would say if I assigned them all the same work at the same time.

“They’re pretty into,” she said, “but about half of our tablets are in the shop right now, so I’m going to have to come up with some way for them to write in groups.”

“Bummer,” I said, distracted. “Mel, let’s connect this evening. Olivia’s trying to reach me. Keep your chin up. You’re doing God’s work here.”

“Yeah. God’s work in a barren wasteland of a school!” She already sounded better. I knew better than to remind her that a job with HIS (HackSchool, Inc.) was hers if she wanted it. It only made her more depressed that she couldn’t bear to pull herself away from the kids who needed her most.

“Liv!” I answered. “Are you at Ubuntu HQ today?” Olivia was my best Co-Location Aide, but I couldn’t always keep track of her schedule (which is to be expected: Co-Lo Aides usually have at least three other jobs).

“I am. Marjorie’s here,” she said flatly.

“Thanks for the heads up,” I said, quickly pulling up Reggie’s data on StudentLink. “Is she in a mood again?”

“She wants him transferred to Fleek this month. I told her that Co-Los are especially matched with student data, but she didn’t want to hear it.”

Some things about teaching will never change.

FYI: Alternative: No tax base, public education gutted, corporations pick up the slack, education is more tailored and specialized, all co-location, homeschool or pop-up, jobless future means parents and community are educating their kids, flexucation vouchers

## 6. Alternative Future

Category	Description
Trend Breaks ( <i>and what might happen to the trends above instead</i> )	<ul style="list-style-type: none"> <li>• Funding shortages and adoption controversy keeps technology out of schools<sup>27</sup></li> <li>• Increasing concern about student data privacy stalls Internet of Things adoption in schools<sup>28</sup></li> <li>• Backlash against drastic increase in autism diagnoses; new information sheds useful light on learning disabilities and makes them easier to work with<sup>29</sup></li> <li>• Parents go ultra-traditional schooling with a 21<sup>st</sup> century bent: one-room schoolhouse-style microschoools, more community involvement and non-school-time learning<sup>30</sup></li> <li>• Surge of private funding to take on the issue of learning once and for all<sup>31</sup></li> </ul>
Unfulfilled Plans ( <i>how might the Plans from above not achieve their goals</i> )	<ul style="list-style-type: none"> <li>• Common Core does not improve performance in international rankings and colleges and employers see no noticeable difference in quality of student preparedness<sup>32</sup></li> <li>• EdTech abandons schools due to restrictions and begins offering and incentivizing ad hoc usage among parents and groups<sup>33</sup></li> </ul>

<sup>27</sup> <http://losangeles.cbslocal.com/2015/02/20/report-laUSD-chief-says-school-district-cant-afford-ipads-for-every-student/>

<sup>28</sup> [http://www.nytimes.com/2015/03/12/technology/learning-apps-outstrip-school-oversight-and-student-privacy-is-among-the-risks.html?\\_r=0](http://www.nytimes.com/2015/03/12/technology/learning-apps-outstrip-school-oversight-and-student-privacy-is-among-the-risks.html?_r=0)

<sup>29</sup> <http://www.medicaldaily.com/mental-illness-over-diagnosed-backlash-over-new-dsm-v-245791>

<sup>30</sup> <http://www.npr.org/blogs/ed/2014/07/02/326196530/the-return-of-the-one-room-schoolhouse>

<sup>31</sup> <http://www.thenation.com/article/201881/9-billionaires-are-about-remake-new-yorks-public-schools-heres-their-story>

<sup>32</sup> <http://theweek.com/articles/455175/common-core-fix-kids-problems-math>

<sup>33</sup> <https://www.edsurge.com/n/2014-09-15-california-s-legal-restrictions-on-student-data-usage>

	<ul style="list-style-type: none"> <li>Funding shortages further entrenches schools in current paradigm<sup>34</sup></li> </ul>
Events (could be headlines, including wildcards)	<ul style="list-style-type: none"> <li>Second economic collapse paired with enormous elderly population draws massive amounts of funding from schools<sup>35</sup></li> <li>Automation leads to high levels of joblessness and/or more free time for adults, who increasingly can and want to use it to mentor and educate the younger generation<sup>36</sup></li> <li>Competency-based education model takes off and is applied beginning in second grade<sup>37</sup></li> <li>Enormous teacher shortage forces re-thinking of K12 education system<sup>38</sup></li> <li>Research shows that school-based learning experiences diminishing returns after age 12</li> <li>VouchersPlus program allows students to not only use their education funding to go to a different school or university, but also to spend the money on other educational experiences as long as they are tracked and reported. Companies, museums, and makerspaces use this as a new funding source and develop highly effective learning programs to meet the need<sup>39</sup></li> </ul>
Issues (including conflicts, controversies, dilemmas, choices not yet made)	<ul style="list-style-type: none"> <li>Competency-based education still relies heavily on standardized tests, so issues of bias remain<sup>40</sup></li> <li>Civil rights organizations see new privatization of school as a violation<sup>41</sup></li> </ul>
Ideas (including new images, perspectives)	<ul style="list-style-type: none"> <li>Millennial parents backlash against their own helicopter parents and embrace more freedom for young people<sup>42</sup></li> <li>Concept of school as caretaker is obsolete since children can now travel safely around their environments without adults, and a village mentality – due to higher numbers of adults with time to spare – creates trust that children will be watched after</li> <li>Centralized model of education seen as outmoded</li> </ul>
Key uncertainties (most important and	

<sup>34</sup> <http://excelined.org/2015/02/03/turn-face-strain/>

<sup>35</sup> <http://www.marketplace.org/topics/economy/americas-next-financial-crisis>

<sup>36</sup> <http://www.washingtonpost.com/blogs/innovations/wp/2014/07/21/were-heading-into-a-jobless-future-no-matter-what-the-government-does/>

<sup>37</sup> <http://www.npr.org/blogs/ed/2014/10/07/353930358/competency-based-education-no-more-semesters>

<sup>38</sup> <http://www.keyt.com/news/Teacher-Shortage-in-California-Getting-Worse/31974132>

<sup>39</sup> <http://www.wired.com/2014/11/radical-ideas-reinventing-college-stanfords-design-school/>

<sup>40</sup> <http://blogs.kqed.org/mindshift/2013/04/to-break-the-mold-is-competency-learning-the-key/>

<sup>41</sup> <http://aclu-wi.org/issue/report-school-privatization-milwaukee>

<sup>42</sup> <http://www.theatlantic.com/features/archive/2014/03/hey-parents-leave-those-kids-alone/358631/>

<p><i>uncertain items from above)</i></p>	<ul style="list-style-type: none"><li>• Will mindsets change around centralization and the custodial function of school?</li><li>• What level of economic collapse/teacher shortage/data would lead to the unraveling of thousands of laws regulating education and school?</li><li>• Can standardized testing be reformed to produce a legitimate competency-based model?</li></ul>
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## 6A. Alternative Title and Summary

<p>Title &amp; One-line Description</p>	<p>It Takes a Village: Distributed Learning and Parenting Makes School Obsolete</p>
<p>Abstract (brief narrative summary)</p>	<p>Massive funding shortages lead policymakers to make difficult decisions about school funding and health care. This, combined with new research showing the ineffectiveness of lockstep schooling for older students (research some say is mere political cover) and an increasing number of parents and other adults making a living working well under 40 hours per week, ushered in PostSchool reform: at age 12, students would take a Basic Competency Test and either be exited from school or tracked for remediation.</p> <p>PostSchool students have access to countless online and in-person learning opportunities. VouchersPlus, a compromise which allows PostSchool students to keep a certain amount of public funding for education (albeit much less than past per pupil spending levels), which they can use as they see fit. Companies and nonprofits see this as a new funding source and develop highly effective, short-term learning opportunities. A more community-minded attitude toward learning and parenting (unaccompanied minors carry a tracker that notifies pre-screened adults—approximately 60% of the population—of the child’s presence when nearby, for the purpose of monitoring and engagement) leads to truly individualized learning schedules and spaces.</p> <p>Students tracked for remediation face an enormous drop in school quality after age 12. EdTech companies try to develop solutions, but the lack of financial incentive leads to shoddy work and quick flameouts. Corporations gain access to student data and choose students to intern with them and sponsor their education as long as the student is working for them. Students who aren’t recruited or retained stay in school all day, with which the ACLU takes umbrage and has sued.</p>
<p>Key Differences from the Baseline</p>	<ul style="list-style-type: none"> <li>• Funding and teacher shortages mean schools are no longer able to keep students in school through 12<sup>th</sup> grade</li> <li>• Technology is blocked from, rather than adopted by, education establishment, leading to a shadow system</li> <li>• Automation leads to increased free time by adults, which changes mindsets about child-rearing and learning: more adults are engaged in the process for kids in their communities</li> <li>• Employers do not take a backseat in learning and career readiness</li> <li>• Education is seen as a moneymaker for organizations who can prove they can help kids learn</li> <li>• Even more drastic inequity</li> </ul>

## **6B. Alternative Narrative**

*The following narrative is modeled after NPR's "Story Corps" series and shows the experiences of two students who have experienced Post School differently. Their experiences highlight some of the possible opportunities and challenges that could arise if the public education system transforms as a result of funding shortages instead of as a result of redesigning the system intentionally.*

INTRO: Now it's time for StoryCorps and today, we bring you two stories of learning. One from a student whose Postschool experience was exactly what lawmakers hoped it would be when they ended compulsory schooling for students after age 12. due to funding shortages, research that showed classroom learning as ineffective for older students, and increased interest from parents and communities in taking charge of children's education. Another from a student who wonders what went wrong.

We start with Jessie Bell, a 16-year-old PostSchooler who was interviewed by one of her coaches, Justin Frank.

JUSTIN: Tell me about your last day of school.

JESSIE: I was 12, the year we all have to take the Basic Competency Test, and my teacher told me I was ready. I was so nervous, and I wasn't sure I wanted to pass. I had friends whose parents told them NOT to pass because they were worried what would happen to them if they didn't go to school anymore.

As soon as I was done, a testing coordinator popped on my screen and connected us both with my Mom. The coordinator gave her the results and congratulated both of us. Then, suddenly, I was in an iCab on my way home, wondering what was next.

JUSTIN: What *was* next?

JESSIE: At first, a lot of nothing. I had my list of museums, internships, and online coaching programs. I was supposed to be spending my time on DreamWakers connecting with possible coaches and Learning Opportunities. My mom would be working and ask me how it was going. I lied. [Laughs]. I was 12! What did they expect?! That I was going to eagerly challenge myself?

My dad was pretty skeptical of the study that was the reason they stopped making us go to school at 12. He has always believed that the government made sure that was the result so they had some cover when they announced the Postschool Program.

JUSTIN: And what do you believe?

JESSIE: I'm not sure. At first it was really strange and I definitely wasn't ready to be making those kinds of decisions. I didn't really know what I was doing, and I tried a lot of Opportunities that just didn't fit. I couldn't find anyone I really connected to, and I just felt like I had to work so hard even find anything remotely fun to do. My mom said it would come and not to worry. She was just so glad that I wasn't stuck in a school for 18 years of my life being told what to do.

JUSTIN: What changed?

JESSIE: It was slow. I started doing a lot of wandering. When my tracker would alert the adults that an unaccompanied minor was around and they would stop me on the street to say hello and check in, at first I'd

say fine and then just keep going. Eventually, I got so lonely for someone to talk to that I would start up conversations.

JUSTIN: And that's how we met.

JESSIE: You did something I'd never heard of anyone doing before, and I was interested.

JUSTIN: I bet you never thought you'd pick up Book Hunting.

JESSIE: Soooo, TC, my friends say.

JUSTIN: TC...People should get to know the Twentieth Century before they knock it. So when did things start to improve for you?

JESSIE: I feel like I just woke up one morning and things were clicking. I was spending twice a week with you, another day a week doing mandatory school babysitting, and taking nano classes online. I'd virtual travel and work on my audiobook the rest of the time, and at some point, it all just felt right. Since then, I've earned more than enough badges to start Advanced Studies, but I'm waiting a little bit. I'm enjoying feeling comfortable instead of panicked about what's next.

JUSTIN: Well, I know it was hard at first, but I think you've made the most of PostSchool. I know I'm proud of you.

JESSIE: Thanks. I'm proud of me, too.

TRANSITION: Next, Fay Jones, who grew up less than 5 miles from Jessie and a year younger, has had a much different experience. She's still in school, still trying to pass the Basic Competency test. A company who liked her skill set based on data tracking sponsors her. She sat down with her father, James.

JAMES: How would you describe your days at school?

FAY: Lonely, mostly, and pretty frustrating.

JAMES: You've been trying to pass that test for several years now.

FAY: I think I've just psyched myself out so much at this point, I don't think I'll ever pass. I know my teachers are trying, and we've had four different learning module programs in the last three years, but none of them seem to help. Someone comes in and teaches us how to use it, then it kind of stops working and someone else comes in. After 12, things got really inconsistent and just...disorganized.

JAMES: You are having some good experiences, though, right?

FAY: Yeah. My TossX co-location is going pretty well. I never saw myself as a machinist, but they must have seen something in my data to show that I might be good at it. They picked me up two years ago, and they seem to want to keep me. Even though things haven't gone the way I wanted, at least I still have a sponsor. I can't imagine being at school all day long, the way things are there.

JAMES: You say things haven't gone the way you wanted. What did you want?

FAY: I was so excited to do PostSchool. I remember you and Mom talking about being in school until 18 and that you thought I would have a better chance to really find something I loved and learned skills that really mattered. I have friends who have 24 badges, have all these great coaches and are just doing so many different kinds of things at once. But it just never happened for me, and I feel like everyone’s forgotten about those of us still in school.

JAMES: I feel that way, too. I’m sorry, and I wish we could have made it different. But we’re still proud of you. We’re still so proud.

FAY: Thanks, Dad.

*Who pays? Who benefits? Who decides? These questions exist in today’s public education system, and unbundling or distributing learning away from a centralized system doesn’t inherently answer them. In any system, equity would need to be intentionally addressed instead of left to chance. Will our Village be one that is built for everyone?*

## 7. Implications

1. Pick either Baseline <b>or</b> Alternative Future	Alternative Future
2. Category	Strategy
3. Futures Wheel	See Appendix

4a.3-5 Most Important Implication (from Futures Wheels – see below)	<ol style="list-style-type: none"> <li>1. Mindsets around hierarchy change</li> <li>2. Line between “student” and other life stages blurs</li> <li>3. Nature of home and private ownership weakens</li> <li>4. Increased inequity</li> </ol>
4b.3-5 Single Most Provocative Implications (from Futures Wheels)	<ol style="list-style-type: none"> <li>1. Basic income instituted to cover students who do not productively engage in self-directed learning</li> <li>2. National identity weakens due to lack of shared experiences</li> <li>3. Children are integrated into business and civic life</li> <li>4. Parenting becomes a shared activity</li> </ol>
5A. Most Important Issue	Without schools, society will need to find other ways to pass on cultural norms and identity. How do we create inclusive, non-exclusionary, non-majority-centric shared experiences that build cultural and national identity?
5B. Most Provocative Issue	How do we capitalize on the potential of a more communal/less hierarchical system without drastically increasing or perpetuating inequity?

