

POLICY *report*

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A Vision for Education and the Future of Learning

by Jonathan Butcher

EXECUTIVE SUMMARY

In 1999, Professor Sugata Mitra installed a computer on a sidewalk in the poor neighborhood of Kalkaji, India.¹ Mitra observed the children who discovered his so-called “hole-in-the-wall” computer and asked them what they thought about the machine. Mitra, whose experiments inspired the story behind the Oscar-winning film *Slumdog Millionaire*, expected the children to have questions about how to use a computer and what they were supposed to do with it. Instead, the children taught themselves how to use the keyboard and navigate the Internet—in English. They didn’t ask for instructions, they wanted a faster processor and a better mouse.

Mitra repeated his experiment in several other Indian villages, and, again, children taught themselves how to use the computer and learned skills and information that schools in the West have been teaching for decades. Mitra explains that his discovery taught him that while it may be “fashionable” to say that the school system in the West is broken, it’s more accurate to say that it’s obsolete.² “It’s just that we don’t need it anymore. It’s outdated,” he says.

Decades of stagnant student test scores and underwhelming high school graduation rates in Arizona and around the country substantiate Mitra’s isolated findings. Traditional classrooms cannot equip every child for whatever their unique future holds, whether they move on to college or enter the job market. In fact, school, as we have known it, may be part of the problem. Students shouldn’t be assigned to a school based on their ZIP code. They should be free to choose the best classes, tutors, or extracurricular activities from a menu of options online or in traditional classrooms, no matter where they live.

To give every child great educational opportunities, the future of learning must be based on four pillars:

- Every student should be eligible to choose the best school or set of classes from different schools and learning centers;
- Students should have access to self-paced instructional tools;
- Education funding should be student- and parent-directed and based on student outcomes;
- And students should be able to combine the credits earned in classes held at different schools and learning centers to complete their course of study.

Arizona has only started to unlock the potential of flexible, challenging educational innovations that focus on student needs and not on a system of public schools. This paper explains what the future of learning should look like and provides examples from states that are taking bold steps into the future like Arizona, Louisiana, Florida, and Utah, along with schools around the country using groundbreaking instructional methods.

Introduction

Mitra’s “hole-in-the-wall” experiments started with a simple question: “What is going to be the future of learning?”³ After documenting case after case of children in the slums of India using a computer to teach themselves complicated material in a language foreign to them, he had a new question: “Could it be that we don’t need to go to school at all?”

Now, travel halfway around the globe to the United States and imagine sitting with your child at the dinner table and preparing for the new school year. But instead of reading a letter telling you what school your child is assigned to, you have a menu of schools, classes, tutors, and extracurricular activities to choose from, some located nearby and others online. This educational directory lists such options as virtual classes, schools that focus on the liberal arts, classes in computer programming, and even lessons taught in another language.

You select math, English, and art classes offered by a local charter school, where your child will sit with friends she’s had all of her life. In the afternoon, she’ll study Spanish and music online and prepare for the SAT in an evening class at a nearby private school. She swims on the swim team at the neighborhood traditional school twice a week.⁴

New technology and bold legislative advances in educational choice are bringing us closer

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Hole-in-the-Wall⁵

On January 26, 1999, Dr. Sugata Mitra installed a computer in the wall between his office at NIIT Technologies in Kalkaji and a poor neighborhood next door. Children were fascinated and taught themselves how to use the machine and surf the Internet in English. Mitra set up similar stations in Shivpuri and Madantusi. Again, children flocked to the computers and learned how to use them, find games online, and look for information. Mitra called this new learning method “Minimally Invasive Education,” and the Government of Delhi helped Mitra install 30 workstations around India. Twenty-three other stations were installed in rural areas of India and in high-poverty villages in Nepal and Cambodia.

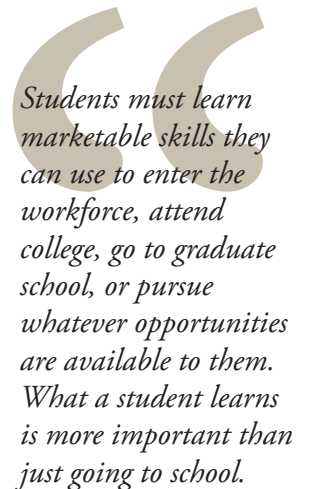
“For villagers, it is more like a village Well [sic], where children assemble to draw knowledge and, in the process, engage in meaningful conversation and immersive learning activities that broaden their horizons,” says the Hole-in-the-Wall Education, Ltd. website.

Mitra’s experiments suggest that requiring students to sit at their desk each day is not the only way—nor the most effective way—to help students learn. As the examples in this paper demonstrate, students can succeed within or without schools that look nothing like the schools their parents and grandparents attended.

to the day when this hypothetical dinner-table exercise becomes a reality for every family. However, this vision for the future is a sharp contrast to the factory model of education we have come to accept. We have grown accustomed to the routine of parents sending their children to an assigned public school, and these schools employ administrators, teachers, and other staff who receive their pay regardless of how many children learn to read or drop out of high school. The question for parents and their students in the next generation must change from “Where do we go to school?” to “How do we want to learn?”

Out with the Traditional School, in with More Options

Students must learn marketable skills they can use to enter the workforce, attend college, go to graduate school, or pursue whatever opportunities are available to them. What a student learns is more important than just going to school. According to the Arizona Department of Administration, 20 of the fastest-growing occupations in the state are heavily populated by science- and math-intensive fields: biomedical engineering, network systems and data communications analysis, medical science, and radiation therapy, to name a few.⁶ Yet only two states rank lower than Arizona on a national science test comparison for 8th graders, and only four states score lower than Arizona in a 4th grade national math comparison.⁷ Individuals with lower levels of educational attainment have fewer choices in life, just like those who attend schools that do not prepare them for work in fields where jobs are available. This burden creates more disparity in societies around the globe. School, as we know it, has not bridged the divide between students performing at different achievement levels because every child learns material at a different pace.



Students must learn marketable skills they can use to enter the workforce, attend college, go to graduate school, or pursue whatever opportunities are available to them. What a student learns is more important than just going to school.

Figure 1: Arizona Department of Administration, Fast-Growing Occupations in Arizona 2008-2018⁸

Occupation Title Standard Occupation Classification	Percent of Job Growth	Number of Job Openings	2009 Average Annual Salary	Education and Training Requirements
Biomedical Engineers	54.8%	182	\$92,247	Bachelor's degree
Credit Authorizers, Checkers, and Clerks	52.0%	5,689	\$25,072	Short-term on-the- job training
Athletic Trainers	44.3%	156	\$39,144	Bachelor's degree
Network Systems and Data Communications Analysts	40.6%	2,686	\$68,997	Bachelor's degree
Home Health Aides	38.9%	8,786	\$21,715	Short-term on-the- job training
Medical Scientists, Except Epidemiologists	37.8%	511	\$71,030	Doctoral degree
Electrical and Electronics Repairers, Powerhouse, Substation,	37.1%	95	\$71,415	Post-secondary vocational training
Radiation Therapists	34.7%	323	\$66,571	Associate degree
Physician Assistants	33.9%	674	\$84,457	Master's degree
Dental Hygienists	32.4%	1,422	\$73,998	Associate degree
Pharmacy Technicians	32.2%	4,416	\$30,098	Moderate-term on- the-job training
Surgical Technologists	31.4%	884	\$43,664	Post-secondary vocational training
Dental Assistants	31.1%	3,148	\$35,019	Moderate-term on- the-job training
Financial Examiners	30.9%	244	\$57,587	Bachelor's degree
Cardiovascular Technologists and Technicians	29.2%	428	\$44,555	Associate degree
Physical Therapist Aides	28.1%	388	\$24,950	Short-term on-the- job training
Personal and Home Care Aides	27.5%	5,328	\$21,680	Short-term on-the- job training
Biochemists and Biophysicists	27.5%	48	\$53,414	Doctoral degree

Evidence from student test scores and high school dropout and graduation rates indicate that education is due for an upgrade.

Source: Arizona Department of Administration, "Fast Growing Occupations in Arizona '08-'18," <http://www.azstats.gov/pubs/labor/FastGroOccs.pdf>.

Evidence from student test scores and high school dropout and graduation rates indicate that education is due for an upgrade. Arizona student test scores in math and reading on the Nation's Report Card have been unchanged for decades, and Arizona is in the middle

of the pack when it comes to graduation rates. Arizona's average annual improvement in the state's graduation rate between 2006 and 2010 is positive, though still near the middle of U.S. states (20th), but Arizona's freshman graduation rate (how many freshman from the class of 2006 graduated in 2010) ranks 42nd in the country.⁹

Compared to the national average, Arizona students are also not taking the kind of classes that will challenge and prepare them for the jobs in the employment sectors listed above. Arizona's student participation rates in Advanced Placement courses, college-level courses taught in high school, and college entrance exams are well below the national average.

Figure 2

	AP Participation Rate	ACT Participation Rate	SAT Participation Rate
Arizona	17%	35%	27%
US Average	32%	52%	40%

Source: The College Board, "The 9th Annual AP Report to the Nation," February 13, 2013, <http://media.collegeboard.com/digitalServices/pdf/ap/rtn/9th-annual/9th-annual-ap-report-single-page.pdf>, p. 36; The College Board, "The SAT Report on College & Career Readiness: 2012," <http://media.collegeboard.com/homeOrg/content/pdf/sat-report-college-career-readiness-2012.pdf>, author calculations; ACT, "2012 ACT National and State Scores: Average Scores by State," <http://www.act.org/newsroom/data/2012/states.html>.

Around the United States and the world, the way in which students are educated through the traditional school system cannot change fast enough. Education is a critical predictor of a person's future quality of life, no matter where he lives. The OECD reports that the unemployment gap between individuals with different levels of educational attainment grew between 2008 and 2011.¹⁰ Around the world, individuals with lower levels of education saw their unemployment rate grow by 3.8 percentage points. Critically, during the recent financial recession, data showed that completing coursework was not as important as which courses a student completed and what he learned in those classes:

The changes in enrollment rates, employment rates and investment in education observed in the first years of the recession indicate how . . . individuals, families and societies as a whole fared during the most challenging economic and social crisis in recent history. Highly educated young people from fields of study in high demand found a job easily . . . and could envisage a prosperous life ahead of them. For others, a tertiary qualification [college degree] did not bring the expected rewards, either because the labour market was contracting too much—often protecting older generations at the expense of the youngest generation of workers—or because their chosen field of study was already saturated or not aligned with the needs of the labour market.¹¹

Parents and legislators must give tomorrow's students the opportunity to reverse these trends of low test scores and the lost opportunities because of mediocre graduation rates

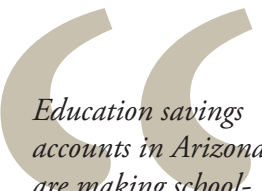
Parents and legislators must give tomorrow's students the opportunity to reverse these trends of low test scores and the lost opportunities because of mediocre graduation rates and too few students taking challenging course material.

and too few students taking challenging course material. Students need more than just an assigned school and more than even choices between schools—they need choices between challenging classes, extracurricular activities, and other educational options.

We need to build an educational future for our children based on four pillars:

- Every student should be eligible to choose the best school or set of classes from different schools and learning centers;
- Students should have access to self-paced instructional tools;
- Education funding should be student- and parent-directed and based on student outcomes;
- And students should be able to combine the credits earned in classes held at different schools and learning centers to complete their course of study.

Every Educational Choice Should be Available Anywhere, to Everyone



Education savings accounts in Arizona are making school-assignment and seat-time requirements things of the past.

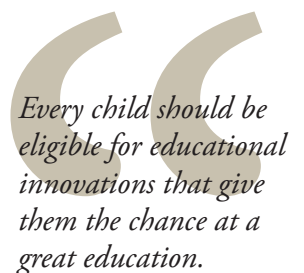
Education savings accounts in Arizona are making school-assignment and seat-time requirements things of the past. The accounts give students choices between schools, individual classes, tutors, and extracurricular activities like academic clubs. Launched in 2011, the Arizona Department of Education awards eligible families a bank account worth 90 percent of the state portion of a child's per student funding from the school funding formula.¹² Parents can use the accounts to enroll their child in an online class, buy textbooks, pay tuition at a K-12 private school, pay for individual public school classes, hire a personal tutor, or even pay for college. One of the accounts' most distinctive features is the number of options parents have for their child's education.

Families have taken advantage of the accounts' flexibility in creative ways. Savings account families subscribe to online education websites such as BrainPOP, for example, that can be accessed anytime, and some families have bought Saxon curriculum materials to use for homeschool, along with Rosetta Stone software to help with foreign language instruction.¹³ Families are keeping unused funds from year to year, saving for their child's college tuition, and hiring individual help for their student in different subjects.¹⁴ Lawmakers in other states are following Arizona's example. In the past two years, legislators in Florida, Iowa, Montana, Utah, Oklahoma, and Missouri have introduced education savings account legislation, though the bills have not progressed.¹⁵ One state has even given parents the flexibility to use tax-credit scholarship funds for different purchases. Under tax-credit scholarship laws in place in 11 states, including Arizona, individuals and businesses donate funds to charitable scholarship-granting organizations. The scholarship organizations award private school scholarship to K-12 students. Since 2012, New Hampshire students have been able to use K-12 private school scholarships to either find a school that meets their needs or pay for homeschool expenses.¹⁶ New Hampshire's scholarships are similar to Arizona's education savings accounts because Granite State families can use their scholarship money to buy homeschool materials and

textbooks or to pay private school tuition, allowing them to choose where and how their child learns.¹⁷

New Hampshire's law is a significant upgrade to private school scholarship laws around the country. Other states that have enacted scholarship tax credit laws, such as Florida, Iowa, and Georgia, have designed the provisions to help families pay private school tuition. Education savings accounts and, to a limited degree, New Hampshire's scholarships help parents meet a child's needs through more than just the choice of a school. Families have the flexibility to meet their child's unique needs through the purchase of different educational products and services.

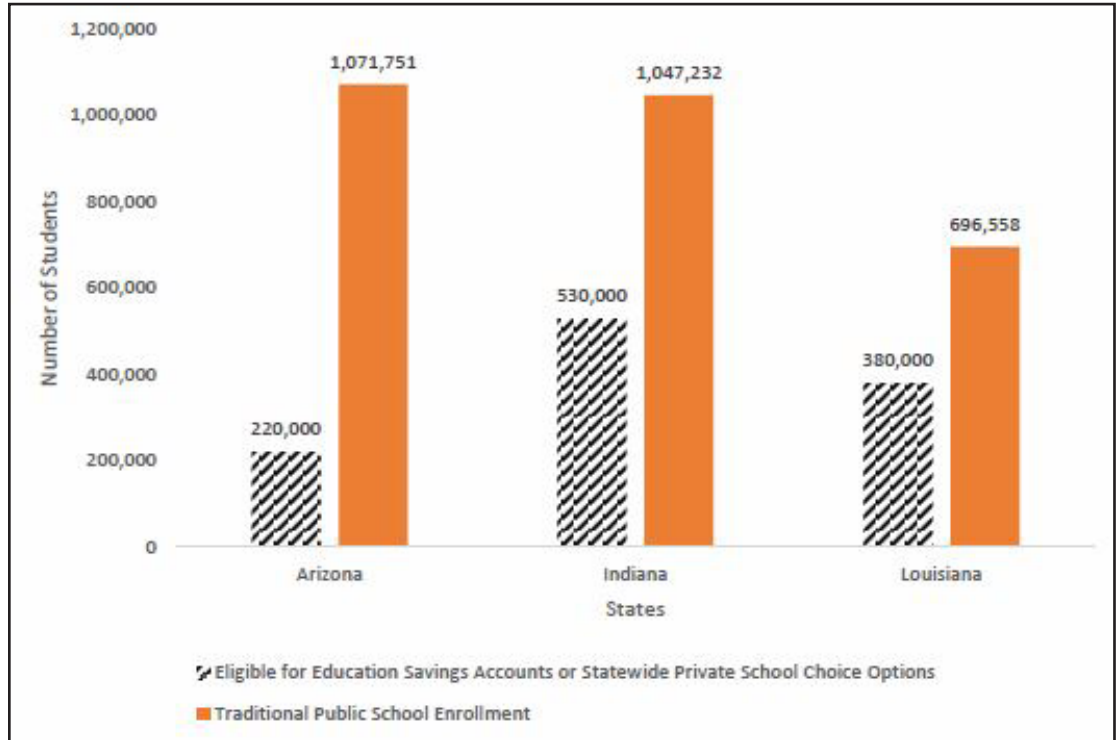
Another distinctive feature of Arizona's savings accounts and the K-12 school vouchers available in Indiana and Louisiana is that hundreds of thousands of students are eligible to use the accounts and vouchers. In nearly every state that allows students to use vouchers or scholarships to attend private school, the scholarships are only available to students who meet certain criteria. For 20 years, the nation's oldest voucher program, in Milwaukee, Wisconsin, was limited to students in the school district who met certain income restrictions.¹⁸ In 2012, lawmakers expanded student eligibility to include children in Racine (located 30 miles south of Milwaukee), and in 2013, legislators changed state law to include any student in the state who is eligible for the free and reduced-priced lunch program. However, the new law only allows 500 students outside of Milwaukee or Racine to participate in the 2013-14 school year. Likewise, in Mississippi, only children with dyslexia are eligible for scholarships, and school vouchers in Douglas County, Colorado, are capped at 500 available slots.¹⁹ These limitations mean some but not all children who need better options have the chance at a successful future. Every child should be eligible for educational innovations that give them the chance at a great education.



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In 2011, Indiana lawmakers made more children eligible for school vouchers than any other state's scholarship program.²⁰ Some 530,000 Indiana children are eligible for vouchers, and more children applied for a voucher in the program's first year than in the first year of any K-12 scholarship program in U.S. history (3,919).²¹ Indiana children from low- and middle-income families are eligible for a full or partial scholarship. In Louisiana, 380,000 state children are eligible for school vouchers.²² Approximately 1 in 5 Arizona public school students is eligible for an education savings account, a total of more than 220,000 children.²³ Eligible Arizona students are: special-needs children, children assigned to schools that earned a "D" or "F" on the schools' state report card, children of active-duty military families, and children adopted from the state foster care system. Incoming kindergarten students that meet any of these criteria are also eligible for an account. In order for all children to have the chance at a superior education, lawmakers must give all students more options than their assigned public schools and not limit school choice laws to select student populations or restrict participation with modest enrollment caps.

Figure 3: Public School Enrollment in Arizona, Indiana, and Louisiana vs. Student Eligibility for Educational Choices



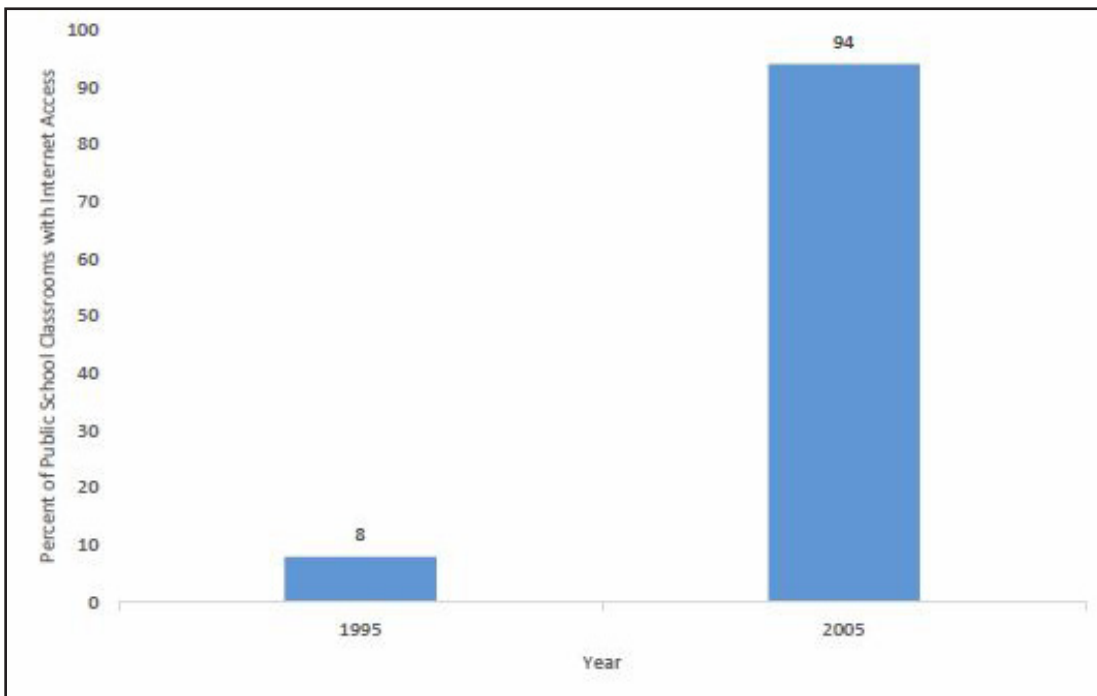
School choice will not level the playing field for all students if only students that meet certain income- or special-needs-related categories are eligible. The disparities between students from different backgrounds will remain as long as only a few children can choose a school that fits their needs.

Source: National Center for Education Statistics, “2012 Digest of Education Statistics: Table 36: Enrollment in Public Elementary and Secondary Schools, by region, state, or jurisdiction: Selected years, fall 1990 through fall 2021,” http://nces.ed.gov/programs/digest/d12/tables/dt12_036.asp.

School choice will not level the playing field for all students if only students that meet certain income- or special-needs-related categories are eligible. The disparities between students from different backgrounds will remain as long as only a few children can choose a school that fits their needs. If access to innovative educational options—or any options at all—is limited, the resulting student success will be limited. These restrictions must become a thing of the past if a great education is to become a reality for all students.

Self-Paced Instruction

“Education technology” used to mean the number of computers in a classroom. And for years, education leaders around the country added computers to their schools. The ratio of children to computers with Internet access was more than halved between 2000 and 2008 (from 6.6 students per computer to 3.1).²⁴ The percentage of classrooms with Internet access jumped from 8 percent in 1995 to 94 percent in 2005.

Figure 4: Percent of Public School Classrooms with Internet Access, 1995 vs. 2005

Source: National Center for Education Statistics, 2012 Digest of Education Statistics, “Table 109: Number and internet access of instructional computers and rooms in public schools, by selected school characteristics: Selected years, 1995 through 2008,” http://nces.ed.gov/programs/digest/d11/tables/dt11_109.asp.

Just because classrooms have computers does not mean that students are more likely to learn what they are being taught.

Michael Horn, co-founder and executive director of the Clayton Christensen Institute for Disruptive Innovation, and Meg Evans, Program Associate at the Christensen Institute, explain that putting more computers in the classroom did not necessarily change what happened in the classroom: “To the extent that [the public school system] has employed technology, it has done so to sustain and reinforce its factory-model processes, not to fundamentally change them.”²⁵

International data confirm this finding. In *The Smartest Kids in the World*, Amanda Ripley reports that a survey of 202 exchange students from 15 countries found that students “overwhelmingly agreed that they saw more technology in U.S. schools [than schools in their home countries].”²⁶ Ripley adds that “even students from high-performing countries said they saw more technology in their U.S. classrooms than back home” and “seven out of ten American teenagers who had been abroad agreed.” Just because classrooms have computers does not mean that students are more likely to learn what they are being taught.

Instead, we must consider education technology as any hardware or teaching techniques that help students learn more material, better and faster, Horn says. For example,

Summit Prep charter school in Redwood City, California, has replaced requirements on how many hours a student is required to attend class with self-paced instruction using online tools.²⁷ Summit employs a hybrid learning model where students spend part of each day with a self-paced online program and part of the day in a classroom. Carpe Diem Collegiate High School, a charter school in Yuma, Arizona also uses a hybrid instructional method.²⁸

Summit children set goals for themselves when they begin their online exercises and are free to choose from a playlist of different online educational applications. Similar to shopping at an Apple computer store, where customers go to the Genius Bar to get help from technicians, students can visit a tutoring bar for extra help. They interact with teachers and other students in breakout sessions. Once a student has finished his assignments, he takes an online test to see if he's met the goals he set earlier in the day. Teachers' roles at Summit are different from a teacher's role in a traditional classroom. Summit teachers act as a student's team member as he makes his way through new material and demonstrates that he understand the lessons.²⁹

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Forty-two percent of Summit students qualify for the free or reduced-price lunch program, and the school has a 94 percent on-time graduation rate.³⁰ The Daily Beast named Summit one of its 10 "Miracle High Schools," and the school is ranked 11th in California according to U.S. News & World Report.³¹ Summit's hybrid model gives students the flexibility they need to learn at their own pace using both online tools and person-to-person interactions, making more effective use of both computers and people.

Online learning pioneer Salman Khan and his Khan Academy helped inspire Summit's new instructional method. Khan Academy started as a YouTube channel with educational videos but is now a fully-functioning, free online resource where students watch lessons, take quizzes, and track their progress, and teachers can monitor the progress of all the students in their classes. As featured on 60 Minutes and supported by Silicon Valley icon Bill Gates and corporate titans like Google, Khan Academy features 4,500 videos for students on subjects ranging from multiplication to the French Revolution.³² Students sign in to the site with their email address and set up an account, and the site tracks their progress through different lessons. The entire Los Altos School District, in Santa Clara County, California, along with students at Summit Prep, KIPP Academies around the country, Eastside Prep in Palo Alto, California, and Oakland Unity Charter School in Oakland, California use Khan Academy as a part of their school day.³³ Los Altos students watch lectures and videos at home, then come to school the next day to work on their assignments (commonly referred to as a "flipped classroom"). In class, teachers review the lesson from the previous evening and help students as they finish their exercises.

Students that struggle with different subjects can spend more time on the material, while others in the class can move on to the next topic. "The benefits allowed teachers to rethink instructional time, and we are actually finding that we have more time," says Alyssa Gallagher, Los Altos assistant district superintendent.³⁴ "Teachers aren't spending

time on skills that students already know.”

Business would proceed at a snail’s pace if every employee had to wait for all of their co-workers to finish the same task before moving on to the next step or a new project. Teachers in traditional classrooms are forced to decide whether to move on to new material before every student has caught up or wait until every student demonstrates that they understand the material before moving on. Either way, some children in a class are going to struggle. Every child is different, and the future of learning will be defined by education technology that allows them to move at their own pace.

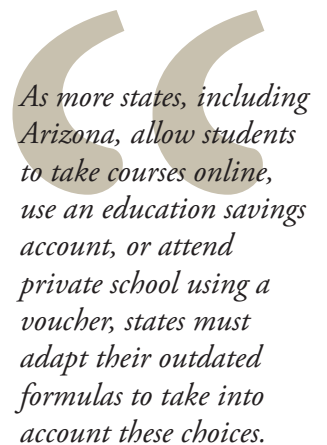
Education Funding and Student Outcomes

Traditionally, taxpayers fund public schools based on the number of students enrolled. Arizona’s traditional school finance formula is no exception and is woefully outdated. Schools report enrollment near the end of a school year, and the state pays schools in the next school year based on the prior year’s enrollment.³⁵ In Arizona, \$125 million taxpayer dollars are wasted as children change schools from year to year or during the school year, and the state pays schools regardless of whether a student learns subject material.

As more states, including Arizona, allow students to take courses online, use an education savings account, or attend private school using a voucher, states must adapt their outdated formulas to take into account these choices. Traditional school funding systems struggle to account for virtual school funding, in particular. Arizona has 52 virtual programs enrolling 30,000 students, and 1.8 million students take distance learning courses nationwide (275,000 students are enrolled in full-time online schools).³⁶ Students enrolled in online courses may not complete coursework for weeks before they are deemed truant or to have dropped out. State treasuries pay virtual schools even if students disappear in cyberspace, and students may re-enroll in a traditional school having not done any work at their online school. As a result, taxpayers pay twice for a student to take the same class, which is not only expensive but creates havoc in state academic accountability systems. Student information systems based exclusively on traditional school enrollment are not sophisticated enough to account for student mobility.

Arizona’s education savings accounts are more effective than state-managed student databases at facilitating school, course, and extracurricular choices and school funding. As explained above, the state deposits student account funds directly in the account, eliminating the need for state computer systems to track where a student is learning at any given time. Account holders make purchases using a debit card or PayPal. The accounts replace bureaucratic, centralized student information systems with a financing tool that resembles a personal bank account.

States that have not yet adopted education savings accounts have found other unique



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ways to pay for online classes based on student course completion. The Florida Virtual School was the nation's first model for incentive-based online school funding. Florida pays the state virtual school, the nation's largest online K-12 course provider, for in-state students only after the student successfully finishes a class (Florida Virtual School offers classes for students living anywhere in the country, and out-of-state students pay tuition).³⁷ In 2008-2009, the state paid Florida Virtual \$1,054 for each course credit earned. Florida Virtual has both full- and part-time programs, and the school enrolls students from all 50 states and 57 countries.

In 2011, Utah enacted a similar funding model for all of the state's online course providers and pays online schools based on student course completion. Utah students can enroll in up to three classes online per year from providers anywhere in the state, including online charter schools and school district virtual classes.³⁸ Online schools receive half of a child's funding when the child enrolls and the remainder when he finishes the course.³⁹ Critically, state law requires that a child's school automatically accepts credits earned through an online course. In Arizona, state law allows districts to prohibit students from earning credits online, and some Arizona school districts, including Scottsdale Unified School District, Chandler Unified School District, and Deer Valley Unified School District, adopted policies that limit a student's online course options.⁴⁰

Schools have the incentive to offer classes and services that parents and their children need and make sure children finish their coursework, and taxpayers only fund schools if a course provider successfully helps a child learn.

Arizona's education savings accounts, Florida's statewide virtual school, and Utah's funding system for online classes are more efficient funding methods for students and taxpayers and eliminate much of the waste in centralized databases. Schools have the incentive to offer classes and services that parents and their children need and make sure children finish their coursework, and taxpayers only fund schools if a course provider successfully helps a child learn.

Individual Course Selection

In June 2013, Louisiana joined Arizona in making it possible for students to select individual courses and no longer limits what a child can learn by what is inside classroom walls in their assigned schools. The Louisiana State Board of Education approved \$2 million for the Louisiana Course Choice pilot program, which allows students to choose from a menu of classes anywhere in the state.⁴¹ Parents and students visit the course-choice Internet homepage, select their desired class and enter their ZIP code, and the website generates all of the options for a specific course at schools located nearby or from online schools.⁴² Options available to Louisiana students include Florida Virtual School classes, courses from the online school K12 Inc., and in-person as well as virtual classes at nearby public and private schools. School counselors are available over the phone to help families select the appropriate course levels and navigate through the selection process.⁴³ The state will cover enrollment costs for traditional and charter public school students, while private school and homeschool students must pay tuition.

Figure 5: Louisiana Course Choice Screenshot

Source: Louisiana Course Choice, <http://www.louisianacoursechoice.net>.

Louisiana's database includes 42 course providers in more than 90 locations. These courses include Advanced Placement classes, gifted courses, ACT preparation classes, and classes at all state colleges and universities. Similar to the Florida Virtual School, Louisiana does not pay course providers the full per-student amount unless the child finishes a course on time. More than 2,000 students have enrolled for the 2013-14 school year.⁴⁴

Louisiana's course choice and Arizona's education savings accounts put education at a student's fingertips instead of requiring a student to go to one location for a certain number of hours. This creates life-changing options for disadvantaged children and students in rural areas that may not have easy access to high-quality classes in their hometowns. The College Board reports that only 33.7 percent of U.S. public schools offer Advanced Placement or International Baccalaureate classes in the core subjects of English, math, science, and social studies.⁴⁵ This means that two-thirds of public school children in the United States, approximately 37 million students, are excluded from the most challenging classes available to them—classes that would help them prepare for higher education or the employment opportunities in technical fields such as those available in Arizona cited earlier.

Louisiana's course choice system is a model of how to give every child access to challenging classes and reduce the disparities between children living in different geographic areas and at different income levels. Lawmakers in every state should create a database of classes and make the options available to families. Arizona's education savings

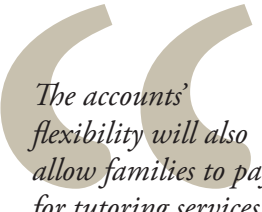
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accounts would facilitate a payment system for the classes, and parents could use their child's account to pay for the courses. The accounts' flexibility will also allow families to pay for tutoring services, standardized test fees, and other curricular or extracurricular activities that will help meet every child's unique needs.

Building a Future on these Four Pillars

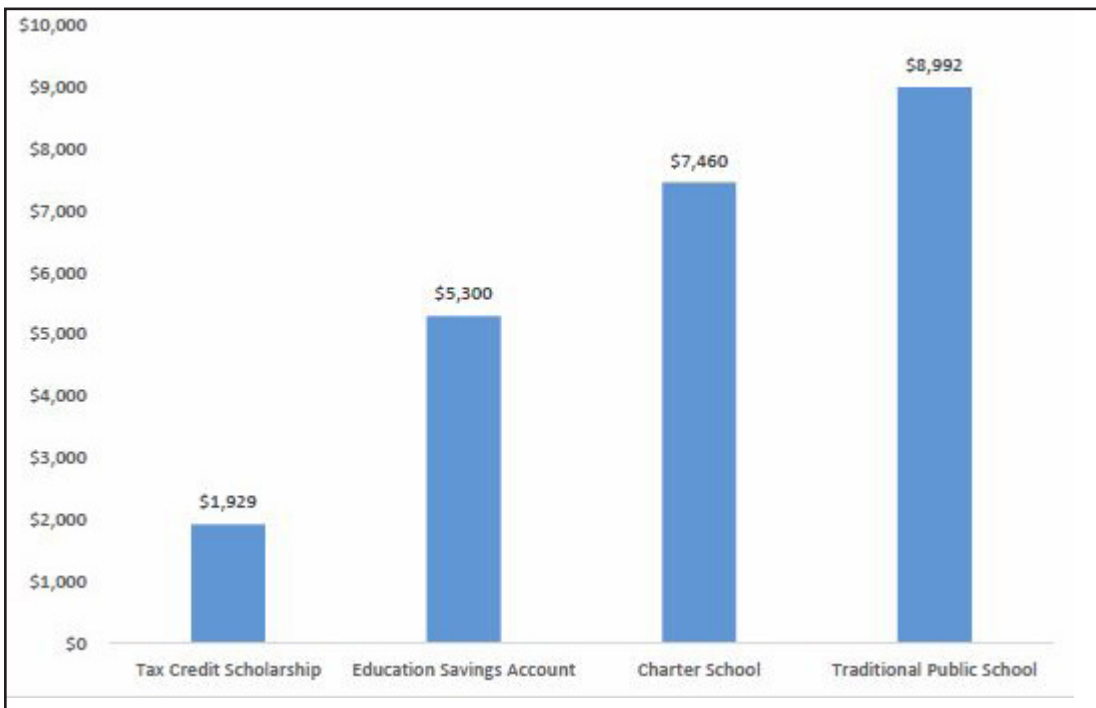
There is more evidence to demonstrate the value of flexibility and choices in education than the findings from Professor Mitra's colorful experiments. As lawmakers consider the four ambitious ideas described in this paper to give more children the chance at a bright future, they should build the case for change on findings from school choice research such as:

- While traditional school student test scores have shown little improvement in reading and no improvement in math since 1973, charter school students around the country have shown steady improvement. In a study of 1.5 million charter school students, Stanford University researchers found that the average charter school student posted achievement scores that are the equivalent of eight additional days of learning in reading compared to peers at traditional schools. This is a significant improvement from 2009, when the same researchers found that charter students posted scores that were the equivalent of seven fewer days of learning.⁴⁶
- Goldwater Institute research found that a higher percentage of Arizona charter schools earned an "A" on their state report card in both 2011 and 2012.⁴⁷ These report card grades are based on year-to-year student achievement on the state test and the improvement among the lowest-performing 25 percent of a school's students.
- In the first study of the impact of school vouchers on college attendance, researchers found that African American students using a privately funded school voucher in New York City saw college-enrollment rates increase by 7 percentage points. For African American students that used a voucher for even a few years, their college-enrollment rate increased by 24 percent over their peers at traditional schools.⁴⁸
- Researchers found that Washington, D.C. students using a voucher to attend private school were significantly more likely than their peers not using vouchers to graduate from high school.⁴⁹ Similar positive effects on graduation were found among students using a voucher in Milwaukee, Wisconsin.⁵⁰
- Without exception, school voucher and tax credit scholarship awards cost taxpayers less than the average public school spending per child in the 50 states. In some cases, scholarship awards are half the size of average per student spending.⁵¹



The accounts' flexibility will also allow families to pay for tutoring services, standardized test fees, and other curricular or extracurricular activities that will help meet every child's unique needs.

Figure 6: Arizona Average Tax Credit Scholarships, Education Savings Account, and Charter School Average Student Awards vs. Average per Student Funding at Traditional Schools



Source: Arizona Joint Legislative Budget Committee, “Overview of K-12 Per Pupil Funding for School Districts and Charter Schools,” September 6, 2013, <http://www.azleg.gov/jlbc/districtvscharterfunding.pdf>; Arizona Department of Revenue, “Private School Tuition Organization Income Tax Credits in Arizona: A Summary of Activity FY 2012,” <http://www.azdor.gov/Portals/0/Reports/FY2012%20private%20schl%20tuition%20org%20crdt%20rept.pdf>, and author estimates based on Fifty-first Arizona Legislature, First Regular Session, SB 1363, http://www.azleg.gov/DocumentsForBill.asp?Bill_Number=1363&Session_Id=110&image.x=-919&image.y=-34, and e-mail communication with the Arizona Department of Education, August 13, 2013. Author calculations. Note: Special-needs student average funding is not included in the education savings account figure provided in this graph. Arizona funds special-needs students in traditional schools and using a savings account at a higher level than the statewide per student average. Education savings accounts are still worth 90 percent of the state funding that would have been used for a special-needs child in a traditional or charter school.

For more than 15 years, researchers have documented how school choice gives parents more flexibility to meet their children’s needs and promotes student achievement. Arizona is a national leader in school choice, but as explained above, student eligibility for education savings accounts is still based on certain criteria.

For more than 15 years, researchers have documented how school choice gives parents more flexibility to meet their children’s needs and promotes student achievement. Arizona is a national leader in school choice, but as explained above, student eligibility for education savings accounts is still based on certain criteria. Other states with similar programs also limit participation. Limited participation can only result in limited results and limited cost-savings.

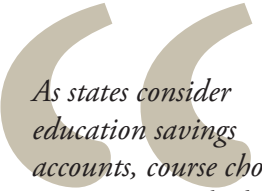
Policy Recommendations

1. **Make all children eligible for the future of learning.** As states consider education savings accounts, course choice options, virtual schools, and private school scholarships, lawmakers should make these options available to all children, not just students that meet certain eligibility requirements. Just as every child is free to attend a public school, so should every child be free to choose from better opportunities that will meet their needs. And parents should not be limited to choices between schools for their children. Arizona, Florida, Utah, New Hampshire, and Louisiana have enacted flexible, innovative ways for parents and students to find a challenging education online, in the classroom, or through a combination of educational services.

2. **Allow children to move at their own pace.** “Flipped classrooms,” where children study at home using tools like Khan Academy and then complete coursework during the school day, and hybrid classrooms help schools make the most of computer hardware and teachers. Students should be free to earn course credit anywhere and finish classes when they can demonstrate they have mastered the subject material.

3. **Create student-based education funding systems.** Lawmakers should use education savings accounts and Florida and Utah’s mastery-based student funding laws to guide them as they replace seat-time requirements with proficiency requirements. Students should not be rewarded for simply showing up each day, and states should not pay schools exclusively on student enrollment. Centralized databases that process school district and school payments have long outlived their usefulness, and states like Arizona, Florida, and Utah have found ways to give parents and students more control over education funding.

4. **Move from school assignment to course selection.** Arizona’s education savings accounts and Louisiana’s course choices elevate student needs above funding school systems. Students should have choices as to where they learn and how they learn. Savings accounts and online course databases give parents and students the freedom to evaluate their needs and determine how, when, and where a child will learn.



As states consider education savings accounts, course choice options, virtual schools, and private school scholarships, lawmakers should make these options available to all children, not just students that meet certain eligibility requirements.

Conclusion

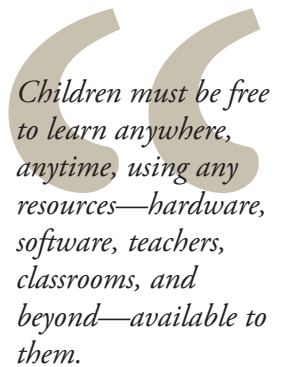
Processor Mitra's experiments, along with new schools and educational tools such as the Khan Academy, flipped classrooms, online schools, and hybrid schools like Summit Prep, upend the notion that we must devote more resources, time, and training to traditional classrooms. Individuals and organizations around the world are taking notice. In February 2013, Mitra was awarded a \$1 million prize to continue his work with Minimally Invasive Education.⁵² Khan Academy continues to add free content to their website with the help of charitable contributions, and more independent charter schools open every year to give parents more options than local traditional schools.

While we should not expect all students to thrive in a self-paced environment, neither should we expect all students to succeed in a structured classroom. Every child is unique, and decades of academic results show that a system of assigned schools does not meet the needs of every child. Children must be free to learn anywhere, anytime, using any resources—hardware, software, teachers, classrooms, and beyond—available to them.

Lawmakers in Arizona, Louisiana, and Utah, along with innovative schools in different parts of the country offer a glimpse of the next generation of educational innovation. Education savings accounts, course choices, and discrete online classes make children's needs and skills the focus of education, not a system of schools.

Legislators and school officials must replace seat-time requirements, which require children to spend a certain number of hours at a desk each day, with policies that ask students to demonstrate proficiency in different subjects. Once a child has learned the material, they should be free to move on to the next level, regardless of where their peers are in the lesson. Taxpayers should fund classrooms only after students have demonstrated mastery over their subject material.

Schools should enhance a child's access to educational opportunities, not require students to enter the same classroom for 180 days each year. Students should have the flexibility to learn wherever they want, whenever they want, from whomever they choose. This is the future of learning.



Children must be free to learn anywhere, anytime, using any resources—hardware, software, teachers, classrooms, and beyond—available to them.

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