



# How **Online** Schools Can **Improve Student** Achievement and Use Resources More **Effectively**

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## How Online Schools Can Improve Student Achievement and Use Resources More Effectively

By Jonathan Butcher, Education Director

### EXECUTIVE SUMMARY

Digital learning in K-12 schools is moving at a rapid pace in Arizona and around the country. More students are taking classes online and enrolled in full-time online schools than ever before. These changes are reshaping the way parents, students, and teachers understand what it means to learn.

“We stand at the vanguard of a shift in education,” says Harvard Business School Professor Clayton Christensen.<sup>1</sup> Christensen predicts that by 2019—just four short years from now—half of all high school classes will be offered online.<sup>2</sup>

This shift holds great promise for students, and not a moment too soon. Arizona student achievement continues to lag national averages. Only one-in-three Arizona eighth graders are able to do grade-level math.<sup>3</sup> If Arizona were its own country, it would rank 30th out of 34 developed nations in an international mathematics comparison.<sup>4</sup>

Key improvements to the state’s online education program, Arizona Online Instruction (AOI), could give more students a high-quality education at a lower cost. This Goldwater Institute analysis indicates that Arizona’s virtual school law are long overdue for attention in three critical areas:

- Accurate accounting of how many students are enrolled part- and full-time and the subsequent cost savings. Full-time AOI charter school students, which make up the majority of AOI students, save taxpayers 22 percent over traditional school district students.



- Update the school funding formula to account for students taking classes at both AOI and physical schools. All students should have the flexibility to progress to the next grade level using credits earned through full- or part-time enrollment in online classes and passing scores on nationally norm referenced tests or college entrance exams.
- Pay schools based on student performance. Arizona should abandon the state’s antiquated funding formula and pay schools—virtual and physical—according to student mastery of subject material.

This brief explains how state policymakers can give students more options online and allow students to pursue success, no matter where or how they choose to learn.

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## Introduction

In 2014, Linzey Leinart earned a high school diploma from Sequoia Choice Arizona Distance Learning—and an associate’s degree from Chandler-Gilbert Community College.<sup>5</sup> How did she manage to earn both at the same time?

Linezey accomplished this by enrolling in Sequoia’s online classes in order to combine high school and college courses each semester. Sequoia operates distance learning computer laboratories around Phoenix, where students can work at their own pace, recover credits they missed in a traditional school, and even complete their course of study at home.

Sequoia is one of 55 traditional and charter schools in Arizona that allow students to take classes online.<sup>6</sup> Across the country, the International Association for K-12 Online Learning (iNACOL) reports that more than 1.8 million students take distance education classes online each year, with some 310,000 students enrolled in virtual schools full-time in 2012-13, a 55 percent increase from 2009-10.<sup>7</sup>

Table 1: Different Forms of Online Learning

<p><b>Virtual charter school</b></p>	<p>Charter schools are public schools that sign a contract, or charter, with an authorizer. In Arizona, the Arizona State Board for Charter Schools authorizes most charter schools. In the charter, schools agree to provide parents and students with educational options and demonstrate student achievement or the authorizer can close the school.</p> <p>Virtual charter schools provide instruction online, and students interact with teachers via video chat and telephone. Virtual charter schools, like physical schools, must enroll any student that applies (though brick-and-mortar schools can cap enrollment based on physical space limitations).</p> <p>Examples of virtual charter schools include Arizona Connections Academy and the Arizona Virtual Academy.</p>
<p><b>Statewide online school</b></p>	<p>States such as South Carolina and Florida operate statewide online schools. Students residing anywhere in the state can enroll, and often students from outside the state can take classes for a fee. A state agency hires administrators and teachers or contracts with local schools to provide instruction.</p> <p>Florida Virtual School (FLVS) is an example of a statewide online school. For more information on FLVS, see the “Lessons Learned: Florida” section below.</p>



<p><b>Hybrid school</b></p>	<p>Hybrid schools hire fewer teachers and use self-paced computer or web-based instructional programs to teach students. Students spend part of the day working at their own pace on assignments and part of the day with a teacher.</p> <p>Carpe Diem charter school is an example of a hybrid school in Arizona, and Carpe Diem also operates an AOI school.</p>
<p><b>Flipped classroom</b></p>	<p>A flipped classroom is one in which students watch lectures online in the evenings to prepare for the next day's classwork. Khan Academy, which produces lectures in the form of free YouTube videos, has made it possible for teachers in flipped classrooms to spend more time on practice questions. Students have their initial interaction with new material the night before working with a teacher on application exercises.</p> <p>The Los Altos School District in California has flipped many of their classrooms using Khan Academy.<sup>8</sup></p>
<p><b>Course access</b></p>	<p>Course access allows students to choose a class offered online or in-person anywhere in their state of residence. Louisiana and Wisconsin operate course access opportunities for students.<sup>9</sup></p> <p>Students log in to a database of available courses offered by colleges and public schools, choose their desired subject, and use their address to locate the nearest class matching these criteria.<sup>10</sup></p>

As explained below, one of Arizona’s basic shortcomings in providing quality online educational options for students is incomplete statistics on the current number of participants, which courses they are taking, and whether they are part- or full-time students. The steady growth and persistent attraction of online K-12 education in Arizona and around the country is evidence that Harvard Business School professor Clayton Christensen is correct: Online classes are a disruptive technology that has—and will continue to—radically change education as we know it.<sup>11</sup>

Sequoia’s program is just one example of an innovative Arizona school using online classes. Other schools like Carpe Diem, which has blended classrooms, and full-time online schools such as Connections and Arizona Virtual Academy give students many different learning options online.

Arizona’s virtual schools are a part of Arizona Online Instruction (AOI), a classification that includes traditional public or charter schools that offer full- or part-time student enrollment in online coursework. Because some AOI schools only enroll students part-time, the student funding laws are different (for a list of AOI schools, see Appendix). The funding mechanism for AOI schools is complex, but the law is meant to fund online schools for the amount of time that a student spends enrolled in an online class, particularly if that student is taking an online class while simultaneously enrolled in a traditional or charter school (see “AOI Cost Savings” below).<sup>12</sup>

Today, 21 full-time virtual charter schools operate in the state. Thirty-four school districts offer online classes. Most district virtual schools are part-time programs, and they account for a smaller portion of online student activity than charter schools do (see Figure 1 below).

Arizona does not have a statewide virtual school operated by a state agency or school district. Since students residing anywhere in Arizona can enroll in charter schools, students across the Valley as well as in cities such as Tucson and Flagstaff can study full-time, tuition-free at Arizona Connections Academy, Arizona Virtual Academy, or Insight Academy of Arizona, to name a few. Some districts, such as Mesa Unified, also offer courses for students living anywhere in the state.

### **Online Schools and Student Achievement**

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survey found that students who took all or some of their classes online outperformed their peers on a variety of indicators, but these findings are limited because most of the studies reviewed for this survey dealt with higher education.<sup>13</sup> As will be described in this report, K-12 online learning programs take different forms, and leading researchers have yet to perform large-scale analyses of student performance. The Arizona Department of Education has yet to collect and report the information that would be required to conduct a thorough analysis, adding to the challenge of gathering the necessary results to evaluate schools' effectiveness.

During the second year of a hybrid school program, the proportion of students reading at grade level increased by between 10 and 25 percentage points at three of the four pilot schools, matching or outpacing average gains in the district as a whole.

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In Arizona and around the country, the dearth of data on student success has allowed critical media reports to persist and go largely unchallenged by online schools. In 2011, the Denver Post said "questions about performance and practice" persist in Colorado after online schools turned from a small pilot project to a "fixture of the Colorado landscape."<sup>14</sup> The paper reported that "thousands [of students] disappear from attendance rolls after the annual October headcount that determines per-pupil funding" and "those who remain generally fare worse on standardized testing than students in traditional schools."<sup>15</sup>

Education Week said K12 Inc., the largest for-profit online education provider in the United States, is learning "hard lessons about managing student enrollment and addressing public criticism about the academic performance of its students."<sup>16</sup> Investors had raised doubts about K12's enrollment strategies and student performance across the company's schools. In April 2014, the NCAA stopped allowing graduates from 24 of K12 Inc.'s schools to participate in college athletics, saying the coursework did not "comply with the NCAA's nontraditional course requirements."<sup>17</sup>

From Idaho to North Carolina and many places in between, critics have cited high turnover in online schools and inconsistent student achievement from school to school.<sup>18</sup> These findings have raised doubts about the efficacy of online education and content providers.

Still, achievement results are available from isolated online programs. For example, a recent study of hybrid schools in Oakland, California, found that "during the second year of the program, the proportion of students reading at grade level increased by between 10 and 25 percentage points at three of the four pilot schools, matching or outpacing average gains in the district as a whole."<sup>19</sup>

On the other side of the country, Florida Virtual School (FLVS), a statewide online school, reports that a higher percentage of its students scored at or

above the proficient level on Algebra I, Geometry, Biology, and U.S. History than the state averages in those subjects.<sup>20</sup> A rigorous analysis of FLVS student results by researchers at Harvard and the University of Konstanz finds that, in Algebra I and English I, students perform at approximately the same level or slightly higher than students taking these classes in traditional schools.<sup>21</sup> The researchers write, “We do not find any evidence of negative effects of virtual education on student learning, and a finding of equivalent quality, on average, between FLVS and non-FLVS courses may suggest a higher level of productivity in the FLVS courses.”

While these isolated examples are promising, more research—and the data required to conduct such studies—is needed on virtual schools around the United States.

As this paper will demonstrate, we still do not know enough about student enrollment or success in Arizona’s virtual schools. As of this writing, the state has not completed the 2013-14 school letter grades for all AOI schools, while state report cards are complete for traditional and charter schools.<sup>22</sup> In 2012-13, of the 21 virtual charter schools in operation, only six received a letter grade. Out of 37 district programs, none was graded in 2012-13.

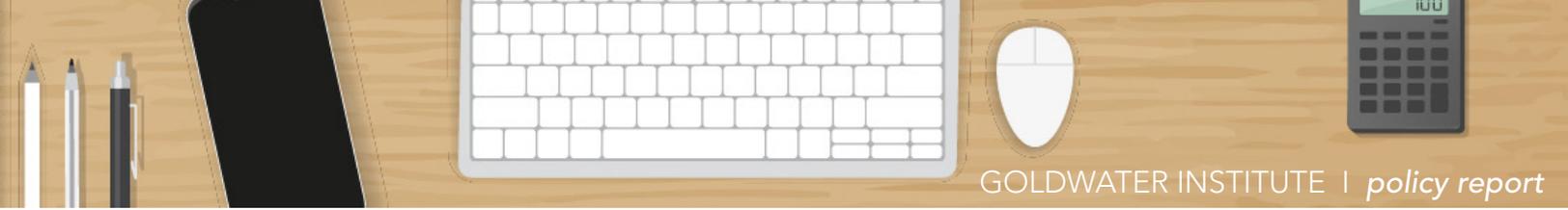
While Arizona officials do not track course completion rates, the Arizona Republic reported in 2011 that 25 percent of students in Mesa’s distance learning program do not finish their courses each year.<sup>23</sup> The same report said that at Primavera, a virtual school that is also the state’s largest high school, school officials say 30 percent to 40 percent of students do not finish their courses.<sup>24</sup>

Just because a student did not finish a full year with an AOI school does not mean the student failed out of school—or that the school failed to teach the student. In fact, some online schools are designed to help students finish a degree or be better prepared for graduation. For example, at EdOptions High School Online, the school designed courses to help students seeking to finish a high school diploma or recover credits and help students who have dropped out but want to return to school.<sup>25</sup>

These data reflect the national trend. Nationwide, there are surprisingly few data on virtual school course completion. For example, the U.S. Department of Education reports that only 65 percent of public school districts offering distance learning track the number of students that withdraw and do not complete an online class.<sup>26</sup> The International Association for K-12 Online Learning reports that 62 percent of online courses offered nationwide are for students seeking to earn credits for courses they struggled with in a traditional school.<sup>27</sup>

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Schools like EdOptions may reduce the time it takes for a student to graduate from high school and help those who must work full- or part-time. Yet Arizona law still requires “seat time” for students in charter and traditional schools every year. Funding for traditional and charter school district funding is partly calculated by the number of hours a child is physically in attendance at a school each year (appropriately referred to as “seat time”). For example, a full-time high school student is one that attends class for 720 hours over a 180-day school year.<sup>28</sup>

The time-honored teaching tradition of advancing a class to the next topic no matter how many students have mastered the subject does not help students that have fallen behind, nor does it help students at the top of the class to move forward. One of the advantages of digital learning is that students can work at their own pace to study class material, even taking an assessment at any point to measure how well they understand the subject. Arizona has only recently begun to experiment with learning tools that allow students to move to the next subject or grade based on their ability to test out of their current level.

State lawmakers should watch for the results of this initiative and be poised to make these options available to all students.

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Arizona’s Grand Canyon Diploma allows high school students to progress after they have passed national or international assessments such as the ACT tests or Cambridge Exams.<sup>29</sup> The first year that students could earn a Grand Canyon Diploma was 2014, and no data are available on student completion. However, the program is designed to help students move to the next grade level or toward graduation as they master subject material. Students can finish their courses and take end-of-course tests at their own pace.

So far, only three dozen Arizona schools are participating in this performance-based diploma model. State lawmakers should watch for the results of this initiative and be poised to make these options available to all students, including students at AOI charter schools.

Parents and lawmakers should look for results like Kali Gagne, age 17.<sup>30</sup> Kali earned a Grand Canyon Diploma last year from ASU Preparatory Academy, which allowed her to graduate from high school two years early. Kali is now enrolled in Chandler-Gilbert Community College, and she wants to attend a four-year school, earn a bachelor’s degree, and then pursue a doctorate.

## Enrollment and Participation in Arizona Online Instruction

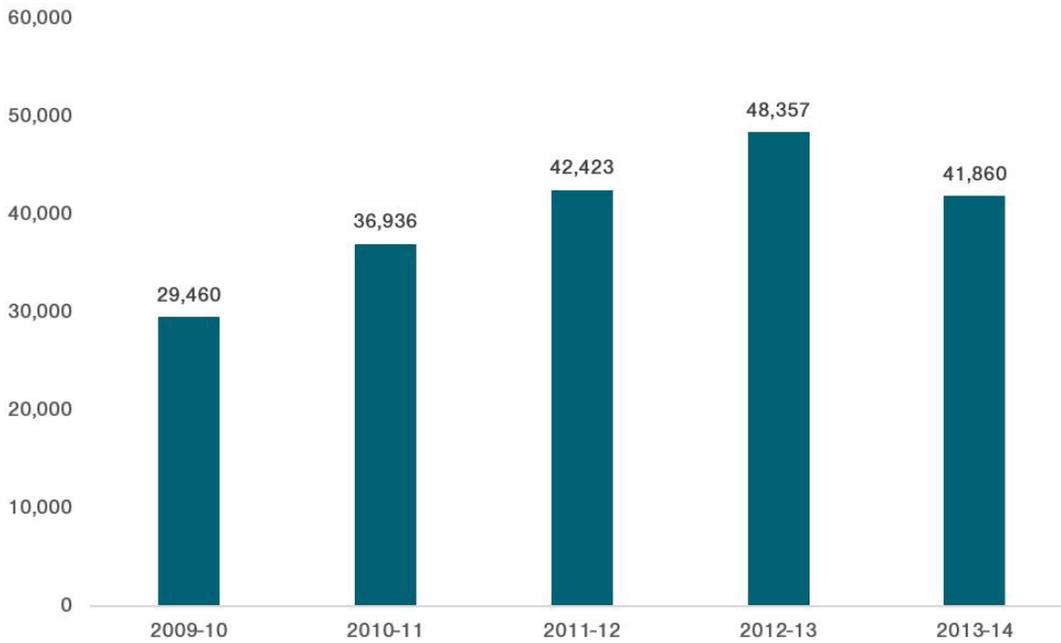
Figure 1 demonstrates student participation in AOI schools since the 2009-10 school year. The data, drawn from the annual Arizona Superintendent’s Report, only describes part of student engagement with online classes. Once the average daily membership (ADM) for online schools is considered, we know little about how many students are actually benefitting from online schools in Arizona. Overall, online school enrollment has increased 42 percent since the 2009-10 school year.

Average daily membership is calculated by dividing the number of hours a student is logged in to an online program’s instructional tool (a website) by the number of hours that student is required to be in class at that grade level in a traditional school. For example, traditional high school students must have 900 hours of instruction to be considered full-time and complete a full school year. So if an online high school student spent 100 hours in a year logged in to an online program, they would generate a 0.1 ADM. Even if they did not finish a course of study or dropped out or transferred to another traditional or online school, a student would be counted as having taken an online class in Arizona.

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Overall, online school enrollment has increased 42 percent since the 2009-10 school year.

Figure 1: Enrollment in Arizona Online Instruction, 2009-10 to 2013-14 School Years



Source: Arizona Department of Education Superintendent’s Annual Reports, 2009-10 to 2013-14, available at <http://www.azed.gov/superintendent/superintendents-annual-report>.

What the data in Figure 1 indicate is that by the end of the 2013-14 school year, 41,860 students at some point in the year enrolled in an online school. However, the total full-time ADM in 2013-14 was 14,161, which suggests that a considerable portion of the 41,860 students were either part-time or did not finish a complete year of full-time virtual coursework. The data are not specific enough to complete the research.

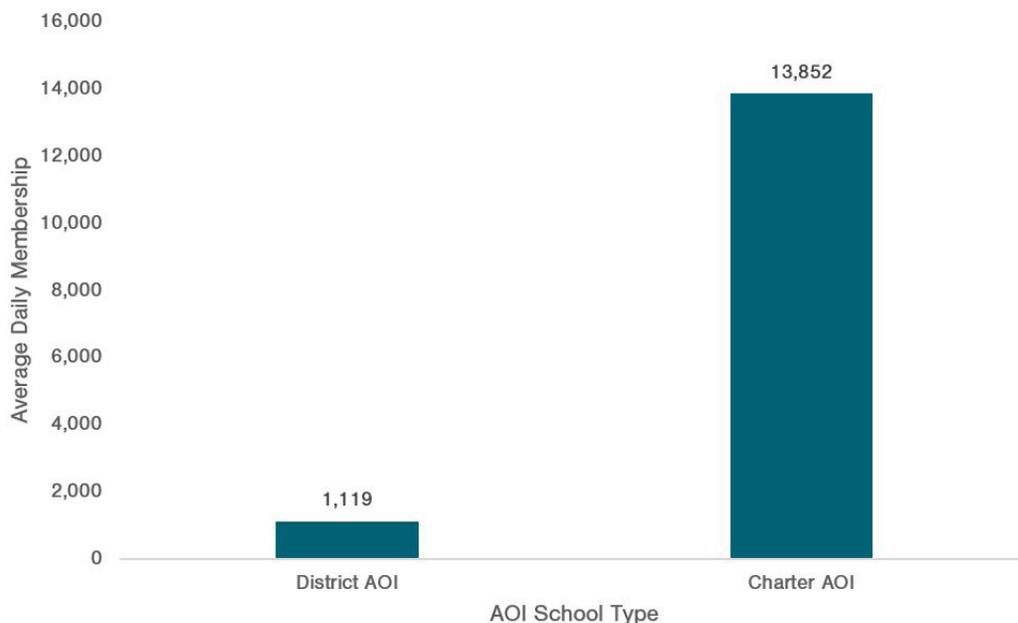
Either enrollment figure is small compared to enrollment in physical public traditional and charter schools. More than 1.1 million students are enrolled in Arizona public schools, which means that if we use the larger figure of 41,860, only 4 percent of Arizona K-12 students even attempt to take a class online. If the true figure is 14,161, then a mere 1 percent of state students are using online classes.<sup>31</sup>

*What do we know about online learning in Arizona? In the 2013-14 school year, 41,680 students enrolled in at least one online class.*

With the available data, we can document that online charter schools are meeting parents' and students' growing demand for online resources. Online charter schools account for nearly all of the students who enroll in an online program and their ADM (Figure 3 and 4).

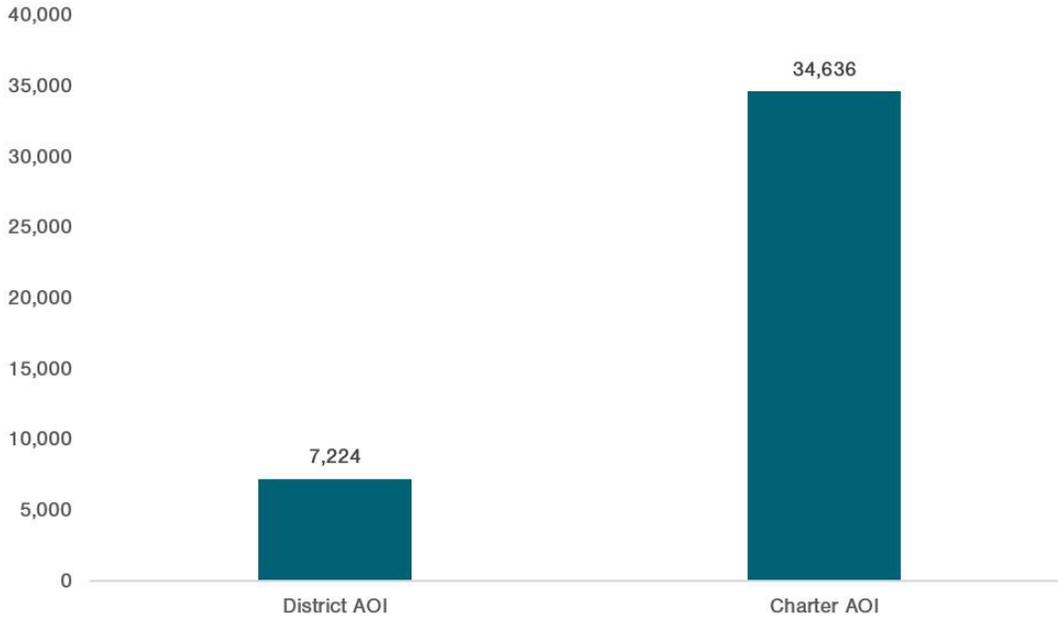
In the 2013-14 school year, 41,680 students enrolled in at least one online class.

Figure 2: Arizona Online Instruction, Average Daily Membership, 2013-14



Source: Arizona Department of Education Superintendent's Annual Reports, 2013-14, p. 11-12, available at <http://www.azed.gov/superintendent/superintendents-annual-report>.

Figure 3: Arizona Online Instruction, Total Students, Charter Schools vs. District Schools



Source: Arizona Department of Education Superintendent’s Annual Report, 2013-14, p. 11-12, available at <http://www.azed.gov/superintendent/superintendents-annual-report>.

### AOI Cost Savings to the General Fund

In a 2011 report critical of AOI schools, the Arizona Republic still said that the schools were a cost savings when compared to traditional schools. The paper emphasized the need for additional analyses. Referencing an Office of the Auditor General report from 2007, the paper wrote, “Online schools spent on average \$5,526 per student, or 18 percent less, than brick-and-mortar schools in fiscal 2006. The audit said the potential for more savings may exist. The state has not performed a cost analysis since.”<sup>32</sup> Today, the average funding per student for AOI charter schools is \$7,417, which is nearly identical to brick-and-mortar charter schools and 22 percent less than physical traditional district schools.<sup>33</sup>

The auditor’s 2007 report explains how online schools can provide this cost savings: “The schools have little, if any, transportation or food service costs and significantly lower plant operation and maintenance costs.”<sup>34</sup> On average, Arizona public schools spend 5 percent of their budgets on food, 5 percent on transportation, and 12 percent on plant operations—which accounts for online schools’ savings of nearly 25 percent per student.

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Yet the state superintendent’s report does not indicate precisely how many students are enrolled part- or full-time because it does not record how many students completed a full year at an online school or even completed an individual course.<sup>35</sup> Any cost comparisons also must take into account how many AOI students attended a physical public school in the prior year or are attending one now. This would allow taxpayers to learn how much the state saves year-over-year as students move from physical schools to online schools.

In the 2007 auditor’s report, all but two of the online schools in operation at that time reported that 80 percent or more of their students attended a physical public school in the prior year (one school did not report this figure, and another had 78 percent of its students transfer from brick-and-mortar public schools).<sup>36</sup>

From this information we can safely assume that most new full-time AOI students attended a traditional public school in the prior year, allowing us to estimate how much money full-time online schools save taxpayers each year.<sup>37</sup> The ADM student count for full-time students at online charter schools is 13,870. If these students attended physical charter schools, the total expenditure would be \$103 million (13,870 ADM multiplied by an average total charter school per student cost of \$7,413).<sup>38</sup> However, AOI schools are funded at 95 percent of the state expenditure for physical schools, which results in \$5 million of savings for online charter schools over brick-and-mortar charter schools.<sup>39</sup>

For traditional schools, using a similar calculation, the savings is substantially less because fewer students attend district online schools (see Table 2).

Licensing may increase wage inequality in two ways: first by keeping people from entering higher-wage occupations, and then by raising wages for those already in high-income occupations.

Table 2: Funding for Charter and District AOI Schools

	<b>Charter AOI Schools</b>	<b>District AOI Schools</b>
<b>K-12 ADM</b>	13,870	1,119
<b>Full cost if attending brick-and-mortar schools</b>	\$103 Million	\$10 Million
<b>Arizona AOI funding</b>	\$97.9 million	\$9.5 million
<b>Savings</b>	\$5.1 million	\$500,000

Source: Arizona Joint Legislative Budget Committee, “Overview of K-12 Per Pupil Funding for School Districts and Charter Schools,” June 18, 2014,” <http://www.azleg.gov/jlbc/districtvscharterfunding.pdf>, and Arizona Department of Education, “Superintendent’s Annual Report for Fiscal Year 2013-14, Vol. 1,” pp. 11-12, <http://www.azed.gov/superintendent/files/2015/01/safr-2014-volume-i.pdf>. Author calculations.

It is critical that the state department of education or state auditor perform annual reviews of the cost savings from online schools for two reasons:

- First, these reports will inform taxpayers and lawmakers of how efficiently the schools are using taxpayer money. The state auditor conducts an annual review of this nature for traditional school districts.
- Second, in the 2007 report, the auditor found that weak accounting resulted in the online schools being overfunded by \$6.4 million. Better accounting procedures and regular reviews would help to resolve these issues as more students enroll in AOI schools.

### **Education Savings Accounts and Online Learning**

In 2011, Arizona became the first state in the country to allow students to use public funds in a private bank account to purchase educational products and services. Today, more than 1,300 students are using an education savings account to pay for private school tuition, online classes, college tuition, personal tutors, and textbooks, to name a few possible uses.<sup>40</sup> The accounts are also available in Florida, where more than 1,800 students applied in the program's first year.<sup>41</sup> Lawmakers in Montana, Utah, Iowa, and Mississippi have also considered education savings account legislation in recent years.<sup>42</sup>

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Education savings accounts allow families to meet the unique needs of their children with online schools if they choose.

Eligible Arizona families complete an application with the state department of education and are awarded a bank account worth 90 percent of the amount the state set aside for a student in the school-funding formula. Parents use the debit card that comes with the account to make purchases. One in five Arizona public school students is eligible for an account, including children with special needs, students in failing public schools, adopted children, and children in military families. Families with preschool-age children with special needs can also apply.

The Arizona Department of Education's pattern of incomplete data collection extends to the savings accounts, and the department only periodically reports how parents use their savings accounts. However, in a survey of a sample of education savings account families conducted in 2013, 14 percent of respondents reported using some portion of their account monies for online educational services.<sup>43</sup> What little data the department does provide finds that 0.05 percent of all education savings account funds from September 2011 to March 2013 were used for online classes.<sup>44</sup>

Education savings accounts allow families to meet the unique needs of their children with online schools if they choose. If a student needs education therapy

to help with a speech delay, parents can use the account to pay for additional services. For gifted students performing ahead of their peers, families can use the account to pay for Advanced Placement courses or even college classes.

Here are examples of the ways in which parents can use education savings accounts to help their children succeed using online learning resources:

- **Tutoring:** Online tutoring programs such as BrainPOP and Time4Learning are supplemental educational websites that provide students with lessons and practice questions.<sup>45</sup> Families can use education savings accounts to subscribe to the sites.
- **Virtual school tuition:** Florida Virtual School is just one online school that charges tuition for out-of-state students. The Keystone School and the George Washington University Online High School are other examples of full-time online schools that parents can access for their children, using savings account funds to pay tuition.
- **Homeschool programs:** Homeschool families can buy physical or virtual curriculum materials using education savings accounts. The Calvert Education program, for example, provides textbooks as well as online materials for homeschool students.
- **Online college classes:** Education savings accounts can also be used for college classes. Colleges such as Stanford, Harvard, and MIT are just a few of the institutions offering classes free or at cost.

For gifted students performing ahead of their peers, families can use the account to pay for Advanced Placement courses or even college classes.

Figure 4: Calvert Education Virtual Schools

The screenshot shows the Calvert Education website interface. At the top, there is a navigation bar with links for Home, Curriculum, Support, Choose Calvert, Homeschooling, and Contact Us. The main content area is titled "Benefits of Homeschooling" and includes a section for "Individualized learning and flexible pacing, of course." with a list of benefits such as "Homeschooling brings families closer together," "Learning can take place anywhere, anytime," "There is freedom to explore individual interests and tailored areas of study," "Shared learning experiences among siblings on educational field trips and learning adventures create lasting memories," "There are unlimited opportunities to nurture and provide individual attention to your child," and "You are able to impart family values throughout the learning process." There is also a section for "Academic Benefits" and "Our families say it best!" with a link to Facebook reviews.

Source: Calvert Education, available at <http://homeschool.calverteducation.com/homeschooling/homeschooling-benefits-61216>.

### Lessons Learned: Florida

Florida Virtual School, a statewide online K-12 school, is an example of a successful virtual school that enrolls students from inside and outside of the state’s physical boundaries. In fact, Florida Virtual School enrolls students from every U.S. state and 67 countries.<sup>46</sup> Florida Virtual School even has flat rates advertised on its website for single- or multiple-semester enrollment (\$400 for one semester, \$800 for two). As of June 30, 2013, the school reports more than 1.7 million semester course completions.<sup>47</sup>

Florida Virtual School can even report the reasons why students want to take courses from its online catalog: A survey from 2012 finds that 20 percent of enrollees take courses at the state virtual school to improve a course grade, while another 20 percent take classes online to graduate on time. Florida Virtual School also reports that its offerings save state taxpayers \$113 per course over traditional state schools.

Table 3: Florida Virtual School Frequently Asked Questions (FAQ)

<b>Florida Virtual School FAQs</b>	
Is Florida Virtual School accredited, and will my student be allowed to use credits earned at this school toward graduation?	Yes. Florida Virtual is accredited by two accrediting agencies. Students from around the world use Florida Virtual classes to earn credits toward graduation.
If I don’t live in Florida, can I still take a class at Florida Virtual?	Yes. Florida Virtual charges \$400 per semester or \$800 for two semesters’ worth of classes.
Will my student be assigned to a teacher?	Florida Virtual reports that “teachers are available via phone, text, email, and IM from 8 a.m.-8 p.m., seven days a week.”

As of June 30, 2013, the Florida Virtual School reports more than 1.7 million semester course completions.

Arizona lawmakers and the department of education should use Florida’s experience and report sufficient data to determine how much online schools save taxpayers per year and per course completed.

Furthermore, Florida does not pay Florida Virtual School its share of in-state public school student funding until a student completes a course. This mechanism holds the virtual school accountable for providing quality educational content to every student. Arizona lawmakers considered legislation to pay online schools based on successful course completion rates in 2012, but Gov. Jan Brewer vetoed the bill.<sup>48</sup> Arizona officials have made limited attempts



to update the school-funding formula in recent years. In 2014, lawmakers enacted performance-funding legislation that provides schools with modest additional funding based on student test scores on the state assessment and whether or not a student graduated.<sup>49</sup> However, these additional funds are, on average, \$35 per student.<sup>50</sup> Schools still receive the bulk of their funding based on enrollment and seat time.

Arizona lawmakers should base the state’s education-funding formula on where a student is choosing to learn. Currently, the system pays for students to attend a physical school, and Arizona law does not allow for an effective way to divide funding between multiple providers. The funding formula should allow for a student’s average daily membership to be divided between classes at public schools and online schools and perhaps even private schools, too, in the case of a student using an education savings account. Seat-time requirements are no guarantee that a student will succeed in their education.

### **Lessons Learned: Colorado**

In Colorado, the state’s online learning provider produces a report each year with information about how many students complete classes. In 2013, Colorado Online Learning (COL) reported a 98 percent course-completion rate.<sup>51</sup> The financial audit finds that the online course provider uses 77 percent of expenditures on “direct instruction,” a critical statistic for Arizona policymakers.<sup>52</sup> Arizona’s auditor general finds that state traditional public school districts use only 54 cents of every dollar spent on education in the classroom.<sup>53</sup>

Seat-time requirements are no guarantee that a student will succeed in their education.

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Figure 5: Colorado Online Learning Enrollment Statistics

**Fall 2012 Enrollment by Course**

Colorado Online Learning Fall 2012 Statistics - By Course August 27 - December 21, 2012													
Course Number	Course Title	Pass	Fail	Dropped Enrolls	% Completion	% Passing	Course Number	Course Title	Pass	Fail	Dropped Enrolls	% Completion	% Passing
Art101	Creative Drawing	8	1		100%	89%		<i>Balance Forward</i>	217	44	4		
Art103	Digital Photography	7	5		100%	58%	SS101	American Government/Civics	13			100%	100%
Art104	Drawing, Challenges,Solutions	*	*	*	*	*	SS102	US History	6			100%	100%
Bus100	Career Exploration	1		1	50%	100%	SS104	World Geography	5		1	83%	100%
Bus101	Intro to Accounting	2	1		100%	67%	SS104	The Dawn of Civilization: World History	7	4		100%	64%
Bus102	Foundations of Personal Finance	19	1		100%	95%	SS105	Wars and Revolutions: World History	1	1		100%	50%
Bus103	Applications in Personal Finance	*	*	*	*	*	SS106	The Road to Self-Discovery: Psychology	5			100%	100%
Bus104	Economics	11			100%	100%	SS107	Living in a Complex World: Psychology	10	2		100%	83%
Bus105	International Business	*	*	*	*	*	SS108	Law & Order: Introduction to Legal Studies	4			100%	100%
Ele101	Fitness	*	*	*	*	*	SS109	Colorado History	2			100%	100%
Ele104	Health	12	2		100%	86%	SS111	The Study of Human Relationships: Sociology	3	2		100%	60%
Eng101	English I	1	3		100%	25%	SS115	Anthropology: Uncover Hum Mys.	3			100%	100%
Eng102	English II	3	4		100%	43%	Tech100	Criminology: Inside the Criminal Mind	8	3	1	92%	73%
Eng103	English III	7	3		100%	70%	Tech101	Web Design	5	1		100%	83%
Eng104	Introduction to Composition	23	1		100%	96%	Tech102	C++ Programming	1			100%	100%
Eng105	Readers/Writers Workshop	10	1		100%	91%	Tech103	Java Programming	2	1		100%	67%
Eng106	AP Literature and Composition	2			100%	100%	WLC101	Computer Animation: The Power of Flash	*	*	*	*	*
Eng108	Shakespearean Theater: The Tragedies	1			100%	100%	WLC101	Mandarin I (Chinese)	1	2	1	75%	33%
Eng109	PoetSpeak	1			100%	100%	WLC102	Mandarin II (Chinese)	1			100%	100%
Eng110	ACT English Reading/Writing Review	7	1		100%	88%	WLF101	French I	10	5	1	94%	67%
Eng 111	Film Appreciation	1	1		100%	50%	WLF102	French II	8	1		100%	89%
M100	Fundamental Math	*	*	*	*	*	WLF103	French III	2	1		100%	67%
M102	Algebra I	2	2	1	80%	50%	WLG101	German I	13	4		100%	76%
M103	Geometry	10	2		100%	83%	WLG102	German II	6	1		100%	86%
M104	Algebra II	1	3		100%	25%	WLG	German III	2			100%	100%
M105	Pre-Calculus	*	*	*	*	*	WLL101	Latin I	5	2		100%	71%
M105	Trigonometry	1	1		100%	50%	WLL102	Latin II	2			100%	100%
M107	AP Calculus	1	2		100%	33%	WLL103	Latin III	*	*	*	*	*
M108	ACT/SAT Mathematics Review	5	2		100%	71%	WLS101	Spanish I	50	2		100%	96%
M109	Statistics	5	1	1	86%	83%	WLS102	Spanish II	33	1		100%	97%
Mus101	Music Appreciation	30	1		100%	97%	WLS103	Spanish III	8	5	2	87%	62%
Sci101	Biology	3	1		100%	75%	WLS104	Spanish IV	4	1	1	83%	80%
Sci102	Environmental Science	5	1		100%	83%			<b>437</b>	<b>83</b>	<b>11</b>	<b>98%</b>	<b>84%</b>
Sci103	College Physics	2			100%	100%							
Sci103	High School Physics	*	*	*	*	*	<b>Course Completion Calculation = Pass + Fail/Total Enrollment</b>  <b>Course Passing Calculation = Pass/Pass + Fail</b>  (* in cells signifies no enrollments in the course for the term)						
Sci104	Future Issues: Biotechnology	*	*	*	*	*							
Sci105	Astronomy	14	2		100%	88%							
Sci106	Geology	*	*	*	*	*							
Sci107	Anatomy and Physiology	20	2		100%	91%							
Sci109	Basic Chemistry	2		1	67%	100%							

Source: Colorado Online Learning, "Evaluative Report to the Colorado Legislature, Fall 2012 through Spring 2013," [www.coloradoonlinelearning.org/about/reports/2014%20Eval%20Report%20to%20Legislature.pdf](http://www.coloradoonlinelearning.org/about/reports/2014%20Eval%20Report%20to%20Legislature.pdf).



Colorado’s report also provides information on the types of students enrolling in online classes: “By far, the largest percentage of districts and students using COL are from rural Colorado, with districts comprised of fewer than 600 students ... Students enroll in COL courses most often because a course is not offered at their local school, or because they have a schedule conflict.”<sup>54</sup>

The Utah State Board of Education also provides an annual performance audit of the state’s online learning program, and the Florida Virtual School conducts surveys of district leaders, parents, schools, and students to gauge policy effectiveness.<sup>55</sup>

Arizona should use Colorado’s example and report the number of full- and part-time students taking AOI classes. The state should also report how many students are using an AOI class to make up general education requirements from their traditional school or to advance ahead of their peers toward graduation.

This information would inform parents, schools, and lawmakers about which schools have low turnover rates and which schools are enrolling students part-time in order to help them complete a class.

### Policy Recommendations

- The Arizona Department of Education or another state agency should report the number of full-time AOI students who completed a full year of coursework, the number of part-time students enrolling in an AOI school purely for credit recovery (even if they are taking only one online class per semester), and the number of students who left an AOI school to drop out or enroll elsewhere.

This information would inform parents, schools, and lawmakers about which schools have low turnover rates and which schools are enrolling students part-time in order to help them complete a class.

If the state department of education improved the reporting of AOI student participation, these efforts would address the problem the Arizona Republic identified in 2011 (“The Arizona Department of Education still has trouble tracking enrollment and paying online schools.”).<sup>56</sup>

- Eliminate seat-time requirements and allow students to move at their own pace. Arizona law still requires that schools operate a 180-day calendar.<sup>57</sup> This requirement is based on the notion that as long as students sit at their desks for a certain amount of time, they are prepared for the next grade. Seven years ago, the state auditor suggested a change to the funding formula for virtual schools: “Traditional funding methods may not be the best for online education.”<sup>58</sup>

Lawmakers should eliminate this requirement. All students and schools should have the flexibility to progress to the next grade level using credits earned through full- or part-time enrollment in online classes and passing scores on nationally norm referenced tests such as the Stanford series of exams, or college entrance exams like the SAT subject tests.

- Arizona should hold online schools accountable for performance by paying schools based on successful course completion. Online schools should receive part of their funding up front, and then the balance of state funding after students have completed their coursework and passed end-of-course exams.

### Conclusion

Rapid growth and disruptive technologies require adjustment and adaptation, both by families and schools. Arizona leads the nation in combining innovative ideas such as education savings accounts with online learning, but our state lags well behind other states in giving a wide range of students—regardless of family income or ZIP code—access to a quality education online.

Furthermore, the state is woefully behind in accurately accounting for the students taking classes online and demonstrating taxpayer savings. These shortcomings are significant for taxpayers and students as the state looks for ways to improve student achievement as budget woes are returning.

With key reforms to the state's AOI law, online schools could save the state significant money and provide world-class learning opportunities to Arizona students. In their series of articles critical of online schools in 2011, the Arizona Republic said that online schools have the potential to save taxpayer resources: "Arizona reaps a small savings by paying online schools less in per-pupil funding than it pays brick-and-mortar ones; the savings would increase if online enrollment and course loads expand."<sup>59</sup>

Lawmakers should update antiquated laws for public school funding and pay schools based on student performance. These changes will help bring a quality education to every Arizona child in the 21st century.

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Lawmakers should update antiquated laws for public school funding and pay schools based on student performance. These changes will help bring a quality education to every Arizona child in the 21st century.

## Appendix

Average Daily Membership (Full- and Part-Time) for Arizona Online Instruction (AOI), 2013-14

<b>AOI School Name</b>	<b>ADM</b>
Ahwatukee Foothills Prep Early College High School, Inc.	37
Ahwatukee Foothills Prep, Inc.	191
Arizona Connections Academy Charter School, Inc.	2,812
Blueprint Education	475
Calibre Academy	7
Carpe Diem Collegiate High School	33
E-Institute Charter Schools, Inc.	446
Edkey, Inc. - Sequoia Choice Schools	1,168
Educational Options Foundation	1,302
Eduprize Schools, LLC	7
Humanities and Sciences Academy of the United States, Inc.	334
LEAD Charter Schools	159
Life Skills Center of Arizona, Inc.	259
North Star Charter School, Inc.	285
Pillar Charter School	35
Pinnacle Education-Tempe, Inc.	2,890
Portable Practical Educational Preparation, Inc. (PPEP, Inc.)	1,363
Portable Practical Educational Preparation, Inc. (PPEP, Inc.)	7,191
Primavera Technical Learning Center	15,454
RSD Charter School, Inc.	178
Southern Arizona Community Academy, Inc.	-
Amphitheater Unified District	15
Amphitheater Unified District	76
Benson Unified School District	81
Buckeye Union High School District	41
Chandler Unified District #80	33
Colorado City Unified District	699
Colorado River Union High School District	-

Cottonwood-Oak Creek Elementary District	151
Deer Valley Unified District	-
Dysart Unified District	233
Florence Unified School District	39
Flowing Wells Unified District	230
Fountain Hills Unified District	86
Gilbert Unified District	-
Gilbert Unified District	539
Higley Unified School District	17
Lake Havasu Unified District	12
Marana Unified District	695
Mesa Unified District	1,257
Mingus Union High School District	297
Nogales Unified District	-
Paradise Valley Unified District	269
Payson Unified District	65
Peoria Unified School District	654
Scottsdale Unified District	309
Sedona-Oak Creek JUSD #9	52
Show Low Unified District	77
Sunnyside Unified District	70
Tempe Union High School District	60
Tucson Unified District	588
Vail Unified District	344
Wickenburg Unified District	56
Yuma Union High School District	179
<b>Total</b>	<b>41,860</b>

Source: Arizona Department of Education, Annual Report of the Arizona Superintendent of Public Instruction, Vol. 1, January 2015, <http://www.azed.gov/superintendent/files/2015/01/safr-2014-volume-i.pdf>.

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