

Creating Sound Policy for Digital Learning

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Summary: Online learning and our current system of local education governance are at odds with one another, to say the least. In this paper, John Chubb examines how local school district control retards the widespread use of instructional technologies. He argues that the surest way to break down the system's inherent resistance to technology is to shift control from the local district—and thus the school board—and put it in the hands of states. He then outlines ten steps to get us to this brave new governance system, from "Create a Public Market for K-12 Online Learning," to "Establish Student Learning as the Foundation of Accountability for Online Schools and Providers."

This is the fifth and final paper in a series examining sound digital-learning policy. Previous papers appearing in this series include "Quality Control in K-12 Digital Learning: Three (Imperfect) Approaches" by Frederick M. Hess; "Teachers in the Age of Digital Instruction" by Bryan C. Hassel and Emily Ayscue Hassel; "School Finance in the Digital-Learning Era" by Paul T. Hill; and "The Costs of Online Learning" by Tamara Butler Battaglini, Matt Haldeman, and Eleanor Laurans. This working paper series is generously supported by the Charles and Helen Schwab Foundation.



Overcoming the Governance Challenge in K-12 Online Learning

By John E. Chubb

Technological innovation has thus far had little impact on K-12 education. Public schools, their classrooms, and their methods of instruction work much the same today as they have for decades. Experts have predicted for some time that technology would transform schooling. But no transformation was wrought by television, computers, interactive white boards, or even the Internet. The reason for this is surely not a lack of need for improvement: Weak achievement in American schools is a longstanding issue. Nor is it a lack of suitable technology: Online learning and computer-based instruction have promising track records of raising achievement in K-12 schools as well as in higher education, where technology is already used extensively. The reason is the capacity of the public school system to resist innovation.

If policymakers want to see more rapid technological innovation in K-12 education—innovation that works to the clear benefit of students—they will need to take a hard look at how the public education system has managed to forestall innovation

for so many years. They will need to consider how that system is structured, governed, and controlled. In the end, public schools are government bodies. They make decisions about technology as they do everything else: through the political process. That is where the resistance centers—and where it so often succeeds. Hence that is where policymakers will need to bring change.

An Alternative Model

There is nothing *inherently* sclerotic about K-12 education. It is a nearly \$600 billion industry, a potentially attractive market for investors betting on technology. It is far larger than higher education, where students are already making extensive use of technology and where private investment has been huge. As with those in tertiary education, primary and secondary students could also benefit from what technology and online learning have to offer right now. Gobs more investment and years of innovation are not even necessary to reap rewards. But, as currently controlled, public education cannot and will not

John E. Chubb is a distinguished visiting fellow at the Hoover Institution and a member of Hoover's Koret Task Force on K-12 Education, as well as a founder and chief executive officer of Leeds Global Partners.

adopt the changes that technology stands ready to provide. Its current organization is sclerotic.

Consider a quick comparison between K-12 and America's esteemed higher education system: In 2007-08, the most recent year for which federal data are available, 4.3 million undergraduates took at least one online course.¹ That represents over 20 percent of all undergraduates at the time. In the same year, 1.03 million K-12 students took a course online.² That represents just 2 percent of all students. In other words, post-secondary students are more than ten times as likely to take an online course as K-12 students. This probability is even higher—about forty times—if we take multiple course enrollments into account.

Yet online technology is arguably more valuable in the K-12 space than in post-secondary education. K-12 schools are far more limited than colleges and universities in what they can offer via traditional classrooms. Many are too small, with too few specialized teachers, to offer the full range of courses that students may want or need. Cases in point: upper-level science courses, the full range of foreign languages, and the complete repertoire of Advanced Placement classes. Public schools, particularly in inner cities, also face daunting challenges serving diverse student bodies, with many pupils reading well below grade level and others anxious for acceleration. Online programs allow schools to customize instruction to individual student needs. They also offer students one-on-one tutoring by teachers working remotely. And they boast features that are particularly attractive to younger learners: animation, simulation, adaptive assessment and instruction, voice recognition, personal avatars, gaming environments, and more. In sum, technology can bring many instructional tools to the student that a regular classroom teacher simply cannot.³ These tools may be especially powerful in lifting the achievement of special-needs students or unleashing the potential of gifted students. A typical college-age student of eighteen to twenty-five years or an adult learner returning to higher education may also benefit from innovative technologies. But the case is much stronger for students in K-12.

When it's used, technology also helps students to achieve more. A 2009 review of fifty studies of online learning, including both K-12 and higher education, concluded that achievement in online courses was *better* than achievement in face-to-face courses. It also found that "blended" courses, those offering online instruction coupled with face-to-face discussion, might be better still.⁴ The latter finding is especially important

because most K-12 families have childcare needs as well as education needs and will therefore continue to prefer a place-based education for their children, with technology a major part but not the whole of the experience.

Despite these benefits, technology and online education play a very small part today in K-12 education, particularly when compared with higher education, where the use of online learning is determined by the incentives of the competitive market, subject to regulation by the government. The use of online education in K-12 is determined in opposite fashion—by government regulation, subject to a little pressure from the market.

Fundamentally, higher education is a buzzing, competitive marketplace of public and nonprofit and for-profit private institutions. It is, to be sure, subsidized in various ways by state and federal government, but it ultimately depends on the voluntary enrollment of students. By contrast, nearly all of K-12 education consists of government-owned and operated public institutions, with little competition among schools or choice for students and families. There the political process determines the education that is provided.

The proliferation of technology-based instruction in post-secondary was not dictated by government policy. State legislatures did not require online learning or dictate the conditions under which it needed to be offered. Individual professors were free to experiment with the structure of courses offered fully online or through mixtures of face-to-face and virtual instruction. Companies like Blackboard, the leading learning-management system, and Moodle, an open-source competitor, brought rapid technological innovation to the online environment—again, not in response to policy but in response to the preferences of students, professors, and colleges. Companies emerged not only to provide technology and content—the traditional roles of education firms—but to compete as educational institutions.

No one knows what the most effective models of online instruction will be in higher education. And policy-makers now would never try to specify them; the models are always changing. Higher education looks first to the market to determine what is most effective and efficient. States writing K-12 online policy should similarly aim to promote innovation. They should offer incentives and flexibility for providers of online and blended models to invest in new approaches. They should offer opportunities for students to choose

among them. The market must then be overseen. But that is a different and more manageable role for policymakers than attempting to prescribe how educators should use technology.

The Politics of Resistance

Technology could do for K-12 education what it has done for virtually every other industry throughout history: make people and their industries more productive. Sometimes this happens by substituting technology for labor—a computer or other technology doing what once required numerous people to do, such as presenting a full curriculum online. Sometimes it happens by giving labor the ability to do what it could not practically have done before—for example, analyzing mountains of student data in real time. However, technology always requires change, sometimes wrenching change, affecting the people within the industry: They must learn new skills—and are at risk of losing jobs. Consequently, people within industries faced with new technology tend to resist it.

In competitive industries, such resistance typically proves futile. Firms that adopt technology improve and take customers from those that fail to adopt and adapt. In K-12 public education, however, where competition is largely absent, resistance can succeed at least for a good while. In 2009, Terry Moe and I argued that the resistance would eventually—in twenty to thirty years—be undone.⁵ Online education would slowly seep into K-12 schools. It would find niches where resistance was weakest, places like credit recovery for failing students, drop-out recovery for students who have already left school, and Advanced Placement classes for students that some schools simply lack resources to serve. As more students work online, teaching forces would slowly shrink, more teachers would find work teaching online, and—this is the critical point—organized opposition from the school workforce, in the form of teacher unions, would weaken as unions lost members, resources, and power. Harvard business professor Clayton Christensen forecast a similar triumph of technology in K-12 education, but for reasons having more to do with economic than political forces.⁶

In time, it seems inevitable that technology and online learning will come to play a sizable role in public schools. But without the driving force of competition, this could be a very long time coming. At present, online education plays an almost trivial role in K-12 education. In 2010-11, roughly 250,000 public school students were involved in full-time online education, nearly all through virtual charter schools, not through

the regular public school systems.⁷ That is 0.45 percent of public school enrollments. To be sure, full-time online education may not be right for many students. It requires a great commitment from parents, in particular. But the parents of two million students already homeschool their children and could take advantage of online support.⁸ *Full-time* online education is approaching 10 percent of all college students.⁹ The paltry full-time numbers in K-12 are a mark of institutional resistance.

Indeed, while thirty-eight states now authorize online charter schools, half of all enrollments are concentrated in a handful of states that do not restrict the size of the schools or handicap them financially.¹⁰ In 2010, for example, Massachusetts authorized online charter schools but restricted their service to 500 students, at least 25 percent of whom must reside in one “home” district and no more than 2 percent can reside in any other one district—effectively limiting enrollment to a single district. What online school will survive with the few students it can enroll from a single district? What sense does it make in any of these states that limit access to say that students in one district can experience some of the benefits of the online education universe and students in another district other benefits? The Internet obviously imposes no such limits, nor do the course providers. And, what of the twenty-three states that allow no online charter schools at all?¹¹ What is their argument against learning online full time?

State governments have tried to offer their own alternatives to the online charter school. As of fall 2011, forty states ran their own virtual schools. In all, they had 536,272 semester-course enrollments.¹² The enrollments are largely to fill holes in face-to-face public school programs—AP, credit recovery, and supplementary or specialized courses. The students are almost all part time, taking a course here or there. The courses are not integrated, by and large, into robust blended-learning models back on the home campus. If the semester enrollments were converted into full-time student equivalents, the number of students served would be less than 45,000.¹³ Scant progress—as the politics of resistance would predict.

But progress need not be so slow. Resistance to technological innovation is abetted by one feature of the current public education system, above all others. That is the exclusive authority granted to local school districts to determine how students are educated. Except for the right that forty states and the District of Columbia grant students to opt out of their local school districts in favor of a charter school, school districts

throughout the United States enjoy what amounts to monopoly power in their local school markets. School districts have the right to determine which schools students attend, what curricula they receive, and how much access they are provided to online education. School districts are disciplined by the political process—school-board elections and decision-making—but those politics are notoriously vulnerable to pressures from district vested interests, in favor of the status quo.

The district model of governance has been much debated (look to Fordham’s recent paper series “Rethinking Education Governance for the Twenty-First Century” for more). But the issue is different when the subject is online education. School districts lack the scale, in most instances, to create comprehensive online institutions—ones that offer complete K-12 curricula, expert online instructors in all subjects and courses, vibrant online social networks, cutting-edge technology, and access to the best instructional resources in the world. Such institutions require capital, research and development, and expertise far beyond what any school district can accumulate. They also require enough students—hundreds of thousands, not thousands—to support the cost of investment and operation. School districts can be terrific customers for online institutions, purchasing the best that an online industry has to offer. But school districts can never become that industry.

If districts are left exclusively in charge of online learning, they will not become the online providers that technology has the capacity to offer. They simply lack the scale to do this. They will also remain slow adopters or customers, because of the threat that technology poses to the status quo, and especially to jobs. The politics of local school systems make it too easy for established district interests to block rapid change.¹⁴ So for reasons on the supply side—the lack of scale to become high-quality online providers—and the demand side—the political biases in favor of the status quo—school districts should not have exclusive control over student access to online education.

Then who should? The argument here is that that role should fall to the states. Policymakers at the state level have available to them practical, even research-based, measures they could adopt to govern and finance a vibrant public market in online education. A series of steps for state policymakers is outlined below. These steps are recommended not only on their education merits. They make sense politically. State control will buffer the political resistance that heretofore has slowed innovation.

Step 1: Set K-12 Online-Learning Policy at the State Level

Currently, state policymakers face strong pressures from interests tied to the welfare of local school districts. These pressures have thus far succeeded in limiting the number of states that permit online charter schools, holding funding for online schools well below funding for brick-and-mortar schools, and otherwise protecting districts from level-playing-field competition for students. However, states *have* demonstrated that political coalitions will support more ambitious change. During the governorship of Jeb Bush, for example, Florida adopted a law giving all high school students the right to take any course online from the Florida Virtual School (FLVS), which would receive pro-rata funding from the sending school district upon successful completion of a course. In less than a decade, the program has become a huge hit, with students logging 260,000 half-credit course enrollments in 2010-11—nearly half of all state-virtual-school enrollments nationwide.¹⁵ The program’s popularity has changed the politics, building support among the countless families whose children now enjoy the choice.

Much as brick-and-mortar charter-school politics have changed in the twenty years since Minnesota authorized the first charter school in 1991, so will the politics of online education. In the early days of charter schools, before two million children were enrolled in them, opponents—largely school districts and unions—had a relatively easy time hamstringing charter schools if not blocking them altogether. Supporters were far more likely to be Republicans than Democrats. Today, charter schools retain some of the traditional opposition, but they have become mainstays of urban education and enjoy the support of the nation’s leading Democrat, President Obama. Online education will experience the same rise in support as it expands—though even more so than brick-and-mortar charter schools. Online education has a part-time as well as a full-time potential constituency. Tens of millions of students could one day participate.

The key is for a state to take the first step, limiting the exclusive control of school districts over online education. States will hear the objections of districts and unions loud and clear. But states will also hear from the families of students who may benefit uniquely from online education: rural folks without access to full and advanced curricula, urban students stuck in failing schools, advanced students without access to acceleration, students who have been bullied and are at risk of dropping out, athletes and performing artists

who want more flexibility for practice, and special-needs students who want more opportunity to work at their own pace. These students, along with “mainstream” kids simply interested in experiencing what technology has to offer, will number in the tens of millions nationwide. Most will be part-time online pupils, some will be full time. All will provide a growing constituency for preserving the right to choose—online. They will be joined by growing numbers of teachers, technologists, and businesses anxious to develop online solutions.

States are urged to take primary responsibility for creating the system that will govern and finance online public education. On the education merits, districts simply cannot handle this role. Politics makes the role even less tenable. Districts will object to the loss of control. But they should be able competitors in a system where students and families can choose among various online providers. District facilities are close to student homes and may offer blended options that are especially appealing. The state is not taking students and resources away from school districts; the state is rather creating a system that asks districts to earn the allegiance of students rather than being guaranteed them.

To be sure, states are not a panacea for what ails school districts. The political opposition, though bound to weaken, is still there. Some states are quite small and will not by themselves become adequate online markets. States may not open their markets to providers across state lines or internationally. But states are a superior locus to school districts for policymaking.

And states are superior to the only other available option, the federal government. In Washington, the political combatants are the same as at the lower levels, providing no guarantee of pro-market policies. The federal government lacks the Constitutional authority to establish the range of rules necessary to create one effective national system of public online learning. The federal government also has had no success with the intricate issues that individual states will be called upon to address. The federal government can become an important partner to the states; for example, it can provide flexibility in education-grant programs such as Title I to allow students to receive federal support while pursuing instruction online. But the federal government ultimately funds less than 10 percent of public education, and is in no position to call all the shots for digital public education nationwide.

Step 2: Create a Public Market for K-12 Online Learning

Notwithstanding the political forces that may work to the contrary, states should set policies for online learning that promote the development of a competitive market. Policies should encourage widespread student participation in online programs. Policies should attract multiple providers of online content and instruction. Policies should provide funding ample to reward private investment in better products and services. Policies should not discriminate between for-profit and nonprofit providers. Online education offers policymakers an opportunity to channel the beneficial forces of the marketplace into education in a practical and powerful way—more than is possible in brick-and-mortar education.

The online environment allows many providers to compete for student enrollments—providers throughout a state or across the nation, or even around the world. In the brick-and-mortar world, students can only choose among schools within commuting distance of their homes. In the online world, there is no limit to the number of providers or schools from which a student could choose. If the student market is large—and it’s already up to fifty-five million in the U.S. today¹⁶—providers will proliferate. State policymakers should rely on this market to produce the innovation that schools and students require. The state should then govern the market, as described below, to ensure that it drives toward the desired outcomes.¹⁷

Step 3: Provide Students the Right to Choose Online Learning *Full Time*

States should give students the right to choose online instruction as a full-time source of their public education. Just as states (and the federal government) have developed policies over the last two decades that afford many students and families the right to choose among brick-and-mortar schools, states should now develop policies to extend that right to full-time online learning—another form of “school.”

Students should be guaranteed specifically the right to choose any full-time virtual school *in the state*, whether operated as a charter or run directly by a state agency. States should not limit the choice of full-time schools to those based in a student’s home district (as Massachusetts has effectively done) or contiguous counties (as California has done). These restrictions on choice serve no educational value and limit the development of vigorous markets.

Full-time online education is not likely to occupy a large part of the K-12 education market—certainly nothing approaching the 10 percent market share in full-time online higher education. Young students require adult supervision. If they are taking classes online from home or other non-school settings, parents or guardians must be present at least through students' early teen years, if not through high school. Working parents cannot provide this supervision; they require schools that can. As a practical matter, therefore, most parents will not be able to have their children educated online from home. Learning is also a social process; many families will prefer to include the face-to-face peer and teacher relationships found in brick-and-mortar schools. Nonetheless, states should ensure that high-quality full-time online schools develop. They are important to the students who attend them, and they are a potentially valuable source of part-time online instruction, for which demand will continue to grow.

The online world holds the possibility of virtual-school environments that are so much more than just collections of online courses or tutorials. Virtual communities provide extensive opportunities for student participation and interaction over the Internet. Some students may find social interaction and academic participation easier in a virtual setting. Online teachers and advisors can interact with students in many constructive ways besides lecturing or grading student work (think: using Skype and interactive whiteboards, text messaging, and more). As virtual schools evolve, they promise better experiences for students who only use their services part time, as well as for students who are enrolled full time. The best online schools today provide students with a well-rounded education experience that goes beyond just taking courses. More important, the future holds the possibility of more innovation—with technology, educators, and students combining in new ways to improve the learning experience.

Policymakers hold the key to this future. If policymakers permit the development of sizable potential student markets, entrepreneurs will invest in the innovations necessary to create engaging and effective full-time online-school environments. These environments will likely benefit not only full-time online students but millions of students who want to enroll part time. States should value such innovation. But to promote it, states cannot leave full-time online education restricted to district-bounded schools or others subject to within-state geographic limits. Entrepreneurs will not invest, district-by-district, in full-time online schools, each governed by different district

standards and with enrollments of only a few hundred students. Providers will sell individual courses to small district-operated online schools, but that service falls far short of the promise of comprehensive virtual schooling. To maximize innovation and quality, states should permit full-time online schools to admit students from anywhere within a state and to innovate and improve through economies of scale.

Step 4: Provide Students the Right to Choose Online Learning *Part Time*

While full-time online schooling has generated massive political resistance and heated controversy, that innovation pales in revolutionary potential when compared with its part-time complement.¹⁸ This is hardly intuitive. Public schools have been battling, after all, to keep “their” students and, of course, their funding in their home schools and out of full-time virtual schools. Traditional public schools argue that they can provide the online alternatives that students need, whether on a full-time or part-time basis. Where is the potential for a major shake-up in teaching and technology in that solution?

Part of the answer is obvious. Tens of millions of public school students are candidates for online education as part of their place-based or brick-and-mortar education. It is very easy to imagine high school students opting to take some of their courses online, some face to face, and some through a “blend” of the two. Every course in the high school catalog is a candidate for online instruction—not just specialty courses like Advanced Placement, world language, or credit recovery. Many middle school students would also have the maturity and self-discipline to take courses completely online. At the elementary level, it is easy to imagine all students benefiting from differentiated online instruction to help develop their reading and math skills, beyond what whole-classroom instruction can accomplish. The market share for online learning could easily reach 20 or 25 percent of all instructional time across all grade levels if part-time or supplementary online instruction were permitted to grow in response to student need and demand. That is a revolutionary market.

The key question is *if* part-time online will be permitted to grow. Policymakers have everything to say about that answer. At present, school districts largely control how much online learning occurs on a part-time basis. There are exceptions. The state of Florida effectively took control out of district hands when it guaranteed high school student access to FLVS. A few states have required one online course (or two) to receive a high

school diploma. But districts generally exercise tight control over access to online instruction, unless a student chooses to leave for a full-time online school—which relatively few students have chosen to do. Districts have used their control to offer the meager selection of courses, focused, as already noted, on “extras” like AP and credit recovery. Most public school students experience little or no online instruction.

State policymakers can and should limit district authority over part-time access. Online instruction makes it possible to unbundle education in a way that was once almost unthinkable. In the days when education could only be delivered face to face (correspondence schools notwithstanding), students could not practically choose to take science and math in their home high school, English in another high school, and perhaps history at the local college. While some states have guaranteed students the right to choose courses from state or community colleges, the demand for such options is not great: Physical separation makes choice among place-based courses impractical. The Internet changes all of this. Students now can easily take some courses at their home schools via traditional classroom instruction, others on computers while present at their home schools, and still others at their actual homes.

The revolutionary potential lies in giving students the *right* to do so. States should complement the guarantee of student access to full-time online schools with a guarantee of part-time access as well. The precise form of this guarantee will require careful consideration. Unlike guaranteeing full-time access—in which an online school assumes complete responsibility for the student—guaranteeing part-time access requires consideration of how two or more schools or providers share responsibility for a student. The sharing has educational, operational, and financial dimensions. It will also likely differ with the age or grade level of the students.

For high school students, the state should guarantee the right to choose online instruction for any course eligible for credit toward high school graduation, and the right to choose the online provider, subject to the provider satisfying essential financial and educational standards. (Middle school students eligible for high school coursework should also be permitted to participate.) High school students should be permitted to take as few or as many of their courses from online providers as they wish, including their entire curriculum. This guarantee would shift control over access to the gamut of high school courses from schools to students and their families. It would quickly open up a market of online providers competing for the choices of students.

For the schools’ part, states should require all high school students to designate a “base school,” or school of record. In most cases, this school would be a brick-and-mortar institution, but it could also be a full-time virtual school that must also offer part-time access to other online providers. The base school would be responsible for the student’s records, credit accumulation, graduation, extracurricular activities, and overall welfare. It would be paid, as described below, for its services beyond the teaching of courses. More important, the base school would be a fierce competitor for the student’s course-taking choices. If the base school were brick-and-mortar, it would become the natural site for blended-learning options. Base schools would have incentive to work with online providers to devise instructional models that blend face-to-face support with online instruction. Base schools would also be free to offer their own courses composed of whatever mix of traditional classroom instruction and non-traditional experiences they wish. Students would no longer be required to take what their base schools were offering, but there is ample reason to believe these schools would compete successfully.

Part-time choice becomes more problematic below the high school level. In brick-and-mortar elementary schools, students do not follow a course schedule. Different subjects occupy different amounts of time, often depending on the aptitude and progress of students. Curricula often integrate standards across subjects, such as using history and science materials to teach reading. In this environment, it is not straightforward to guarantee students access to part-time online instruction. If a student opts out of the regular classroom to take math, for example, online, what does he miss while he’s gone—reading?—and to what does he return—more math?

In middle school, the same problem can present itself if schools teach integrated curricula or if they give classroom teachers responsibility for multiple subjects. A movement afoot in many urban school systems is the replacement of middle schools with schools running from Kindergarten through eighth grade. The idea is to return students in grades six through eight to the care of one or two teachers, as in elementary school, rather than have students change classes and teachers seven times a day as in high school. Teachers also need the flexibility to devote the requisite time to different subjects—something not provided within a rigid day composed of forty-five minutes per subject. To the extent that middle schools operate like elementary schools, they also present a problem guaranteeing students the right to take individual courses online.

At the same time, schools serving students in Kindergarten through eighth grade could be doing much more than they are to use technology and online instruction to improve teaching and learning. Such students should not be stuck in schools unwilling to move into the digital age. Policymakers should therefore provide some form of guaranteed choice to these students and their families. States should already be guaranteeing access to full-time online schools to students in Kindergarten through eighth grade. To complement this, states should guarantee students the right to limited online instruction. A modest recommendation to begin would be one hour per day for students up to grade five and two hours per day for grades six through eight. If the market is statewide, providers will have ample incentive to determine what mix of core skills, academic subjects, and “extras” like world language or music would be most attractive to young students. The advent of new online options would also encourage base schools to work with providers to create more blended options on the school site. Whatever disruption might be caused at the outset by young students and their families opting out of traditional classrooms would likely be accommodated in due course by more innovative options in base schools.

The recommendations in this step are absolutely vital to unleashing the full potential of education technology. To date, states have been far more willing to give students the right to choose alternative education *full* time—brick-and-mortar and virtual charter schools—than part time. But without the part-time option, most students will not have access, and the traditional system will not face sufficient pressure to innovate. Policymakers will have to grant this right with great care, nonetheless.

Subsequent steps outline how the right to choose online education part time as well as full time can be protected from market failures. A core protection should be understood up-front. The base school that students must designate should remain accountable to the state for the student’s overall progress and performance. It is likely that base schools will be encouraged through competition to offer blended programs that most students will use for most of the school day. But to the extent that students opt to take courses or subjects elsewhere—from state-approved providers, as described below—base schools will need to acknowledge and accommodate student accomplishments wherever they are made.

There are precedents for this expectation already. A number of states give students the right to take courses

at local community colleges and universities without district approval. The federal Title 1 program gives parents in failing schools the right to choose private tutoring at district expense. In both cases, the home school still remains accountable for overall student performance. The rules for online learning that states are urged to adopt continue to have a single school—district, charter, traditional, blended, or online—responsible for each student’s overall welfare.

Step 5: Authorize Statewide Online Charter Schools, Overseen by Statewide Charter Authorizers

Once states provide students the right to choose online education, whether full or part time, they face a new major obligation. Policymakers will need to determine who is eligible to provide online education. In making this determination, these leaders should be mindful of the importance of creating competitive markets for quality online education. In particular, that means ensuring that the markets guard against monopoly power. School districts should not control who competes for “their” students. Nor should any new entity, such as a state-run virtual school—which states may want to support as one, among many, statewide providers.¹⁹

A proven vehicle for authorizing multiple alternative providers of public education is the public charter school. Forty states and the District of Columbia now authorize charter schools in some fashion. About 5,600 charter schools now dot the nation, attended by two million students.²⁰ And policymakers have twenty years of experience with them in operation. About half of the states that permit charter schools also allow them to offer education online, to varying portions of a state’s students. About 217,000 students now attend online charter schools, and provide at least a decade of evidence of what works and what doesn’t.²¹ The charter sector has also produced many of the more innovative models of blended instruction. Policymakers would be wise to build on the foundation of charter schools to provide online-education options for the growing numbers of students who will seek them.

Online charter schools should be authorized according to the best practices that have emerged through practical experience with charter schools of all kinds. Comprehensive guidelines offered by the National Association of Charter School Authorizers (NACSA) provide policymakers an excellent start.²² NACSA provides guidance for initial authorization, ongoing oversight, and renewal of charters, in the online as well as brick-and-mortar context.

These practical guidelines should be supplemented with state policies that strengthen charter laws—especially helping them generate more effective competition. States should provide for multiple authorizers of online charter schools—best practice for brick-and-mortar charters as well. School districts may be permitted to authorize charter schools, but statewide entities should be, too. Examples include the state board of education (as in Massachusetts and California), a special state charter board (as in D.C.), state universities (as in New York and Michigan), or other state-based nonprofit organizations (as in Ohio and Minnesota).

The funding and staffing of these entities must be adequate to the task of effective supervision.²³ States should place no cap on the number of students who may enroll in any single full-time online charter school. States should place no cap on the number of full-time online charter schools that may operate in a state, or on the number of students statewide that may enroll in full-time online charter schools. The market should determine the number of schools in a state and their most effective size.

Online charter schools must assume the full responsibility for students who declare them their base school, or school of record. This means that, in addition to handling all student records and overall student progress, online charter schools must be responsible for all student services such as special education, gifted and talented, and English language learning.

As schools of record or base schools, online charter schools should not be limited to serving only their full-time students. They should be permitted to serve part-time students, too. Like all public schools, online charter schools will serve students with the right to take online courses outside of their schools of record. While students enrolled in full-time online charter schools may be inclined to take all of their online courses from that school, organized expressly to teach online, students may want the variety offered by multiple providers. Online charter schools should be able to compensate for the part-time loss of their students by serving part-time students from other schools. In addition, the state should want students in traditional brick-and-mortar schools to have access to the specialized expertise of online charter schools for their part-time online experience.

Finally, online charter schools should be able to contract for their full education program from for-profit providers. The reality of online learning is that

sophisticated technology and interactive content can require substantial investment. At present, almost all elementary and secondary online courses and comprehensive programs are products of private businesses. K12 Inc. provides the program for over a quarter of all students in online charter schools.²⁴ Connections Academy, owned by the multi-national education giant, Pearson, powers another large percentage. Technology companies like Blackboard certainly make it possible for schools and districts to create and post their own online courses. Higher education uses this functionality extensively. The future is also likely to see more free content online.

Nevertheless, state law should ensure that online schools have access to quality content and technology, whether provided for profit or not. This means that online charter schools should be permitted to contract for their programs from for-profit providers—as is common today. It also means that states should permit private companies that satisfy all other requirements for online charter schools to hold charters and operate online charter schools directly. This is a controversial recommendation, to be sure. These private firms are only able to act as charter governing boards in a few states at present—Arizona and Texas among them.²⁵ But the large role that business will inevitably play in providing online instruction makes it logical to consider businesses to run online charter schools directly. All providers, for-profit or not, must also be subject to strong accountability measures to ensure that the privilege of serving this new public market is not abused.²⁶

Step 6: License Supplementary Online Providers

The authorization of online charter schools goes a long way toward providing choice in online education for students and competition for traditional schools. Online charter schools may also become significant providers of part-time online education. But states must consider other providers of online education, if they wish to create competitive markets. In step 4, states are urged to guarantee students access to part-time online education. But from which providers may those students choose?

Today, school districts decide which online providers their students may use. Districts also decide what courses are even eligible for online instruction. This means that high school students often cannot take *core* courses online. And their choices of supplementary courses—like AP, world language, and credit recovery—are limited to the district's chosen providers. If a

student wants to take a supplementary course from, say, K12 Inc., but the district has contracted solely with Connections, the student would be out of luck.

This arrangement protects a district from any course competition that it may not want. It also makes complete sense given the current organization of public education. Besides charter schools, the school district is the only state-authorized grantor of diplomas and provider of transcripts. Subject to state standards, the school district is responsible for determining whether a student earns credit for a high school course or a passing grade for a lower-level subject. If a student takes a class outside of the district school, the district alone is responsible for deciding whether the course should count toward the student's diploma. The district is currently the only authority recognized by the state to decide what counts. If a student wants credit for learning a world language, for example, through Rosetta Stone, but the district only recognizes Berlitz, the district prevails. And prevail it should. Students cannot be the arbiters of their own academic progress.

But there is also a problem with this arrangement. In a world where state policy is attempting to provide choice for students and stimulate competition among providers, school districts should not be left to decide from which providers students will be awarded credit. Districts simply have too much incentive to limit students to instruction by their own teachers. Fewer students enrolled in district classes means less need for district teachers and potentially painful layoffs. Students will be better served if district schools must earn student enrollments through quality teaching and innovative uses of technology. These same arguments apply to traditional brick-and-mortar charter schools, which could also be reluctant to release students for external online instruction.

If districts (or traditional charters) are not the gatekeeper for student credit, who is? The most logical candidate is the state's charter-school-authorizing authority. This authority already approves and supervises online charter schools. To fulfill that responsibility, the charter authorizer must have expertise in online programs and providers. Most online charter schools today deliver programs provided fully by online-education companies. Charter authorizers must know these companies and their services to carry out their duties competently. No state agency is likely to know more about online-education providers than authorizers of online charter schools. States are also urged to allow online charter schools to provide part-time online instruction. If a charter authorizer is capable of judging

an online charter school, based on a company provider, as a part-time online provider, the authorizer should be able to judge the company provider independently as well.

States should expand the responsibility of charter authorizers, then, to include oversight of part-time online providers, as well as online charter schools. Charter authorizers would be responsible for approving, supervising, and renewing approval of all part-time providers not otherwise approved by the state. Thus, charter authorizers would not have to approve online courses offered across district lines by school districts. Authorizers would not need to approve colleges and universities otherwise eligible to provide courses to public school students for credit. Charter authorizers would have no authority either over online providers that school districts choose at their discretion. Charter authorizers would approve providers seeking to offer part-time instruction to students choosing options not sponsored by their base public schools.

To be clear, in the role as licensers of part-time online providers, charter authorizers are not taking on any role in supervising online instruction or other elements of accountability in district schools. District schools and public charter schools—traditional, online, and blended—remain subject to state accountability requirements such as proficiency testing and standard graduation conditions. Base schools, regardless of their form of organization, retain responsibility for overall judgments of student progress, grade-level progression (if it remains relevant), and the awarding of diplomas. The main contribution of the authorization of online providers is the assurance that courses or subjects taken from a provider meet state standards and should therefore be given credit in the base school—contingent on passage of examinations, as described below.

So limited, the added responsibility for charter authorizers is not likely to become a great burden for them. The focus would be mostly on companies already providing comprehensive services to online charter schools under authorizer oversight, or courses to school districts that have already done significant vetting. Authorizers could issue term-limited licenses to companies to offer credit-bearing courses to students in any school district in a state. Much like online charter schools, part-time providers would need to provide annual reports and be reviewed periodically for renewal of their licenses.

A word of caution here: Some states already have approval processes for online providers. The processes

are often painfully slow, dragged down by course-by-course scrutiny, and infrequent review cycles. They are subject to the same political pressures that resist competition from alternative providers of all kinds. But none of these review processes is currently in the hands of charter authorizers; state education departments normally preside. If charter authorizers apply their own best practices to this new area of responsibility, and if multiple authorizers take up the task, pitfalls of past approval systems may be avoided. Charter authorizers are not perfect, to be sure, but they have the collective experience to make them the best bet for state policymakers to license online providers effectively.

Step 7: Fund All Learning Opportunities Equally Per Pupil

Funding is critical to the success of any education system. It is especially so in a system that aims to capitalize on the forces of the market. Public education today is not market-driven except in limited ways—competition from charter schools and private schools and among school districts.²⁷ The new system, however, aims to spur private investment and direct public dollars toward educational choices that survive and indeed benefit from vigorous competition among providers. America's higher education system has demonstrated both the interest in education among private investors and the potential of education institutions of all types to innovate and compete. Public education could generate its own positive dynamic—if it allows funds to find their most productive uses. Money, then, would clearly matter.

In designing a funding system to accommodate online learning, states should aim first and foremost to allow all dollars to follow the student.²⁸ Funding should be neutral with respect to where and how the student receives equivalent education value. The funding system should not care whether the value was received in a brick-and-mortar school, a blended environment, or a full-time online charter school. Education value should be measured in education outcomes and not in education inputs. If a student passes a class taught fully online, the provider should be paid the same as if the student earned the pass in a traditional classroom.

This point is a matter of controversy, as some would argue that technology should reduce the cost of education. In another paper in this series, the Parthenon Group estimates that a full-time virtual school can represent a savings of more than a third over a traditional school.²⁹ But, as Parthenon also cautions, the way to determine if money is to be saved is not for

policymakers to decide arbitrarily to pay online providers less money than brick-and-mortar providers. Such price determinations would require countless decisions, for which policymakers have insufficient information, about how technology is “best” used in education. Setting prices for online versus brick-and-mortar education would stifle innovations in online learning and in creative combinations or blends of technology and face-to-face instruction. Policymakers should leave it to schools and providers to decide the best mix of educators and technology. Policymakers should fund all options at the same level, allow them to compete for students, and let the market reveal what savings are possible. Granted, the savings will not be as evident as in markets, like higher education, where providers can set prices—e.g., tuition. But providers can and should be required to provide reports on their spending, including profits, to reveal to policymakers over time what savings are possible.

Specifically, then, how should the new system be funded? Rules must be established for online charter schools and online courses. The latter is a novel area of funding and regulation. Online charter schools should be funded at the full per-pupil average spending level of students' home districts. All funding to which a student is entitled—local, state, and federal—should travel with him or her to a full-time online charter school. (This same principle should be applied to the funding of all schools, as most public schools will eventually become some mix of traditional teaching and technology. Schools should not be denied state or federal funds as they adopt more online instruction.) The “cost” of full-time online schooling can vary, depending on the inputs to it, particularly the intensity of online teacher support. Online schooling certainly enjoys certain savings over traditional education—student facilities, transportation, and food. But online education also comes at significant unique cost—online content and software development, computers and servers.³⁰ Online education also employs numerous teachers and advisors, not to mention far more technology staff.

The cost of full-time online education should be left to the marketplace, as providers compete to provide the best education possible for the full price taxpayers are willing to pay for a public education. If online schools are asked to provide the very same education services and satisfy the same standards as brick-and-mortar schools, they should be paid at the same operating funding level. Currently, no states fund online charter schools with all federal, state, and local dollars.³¹ Pennsylvania once did so, but now allows local districts to retain some of their per-pupil funds.³² In general,

online charter schools suffer worse versions of the financial handicap suffered by charter schools in general. If policymakers are committed to bringing technological innovation to public schools, they will not disadvantage the innovators financially. Online charter schools, brick-and-mortar charter schools, traditional district schools—they all carry the same full-time responsibilities and should be funded comparably.

The same principles apply to part-time online learning. But the details are different, and tougher to specify. They are also extremely important to get right. Online education must become an integral part of place-based education if it is to improve education for the vast majority of students. Most students, even at the high school level, will not want full-time online learning. The youngest students, needing adult supervision, may find blended learning the only successful use of technology. Schools will undoubtedly play a lead role in designing blended environments and offering choices among online and traditional classes. Schools and districts, subject to competition, will shop among online providers, and pay the price per course or offering that makes sense for their budgets and needs. Schools will use their overall funding per pupil to pay for innovations and allocate dollars among teachers and technology. The market will drive prices down and quality up. Policymakers require no new funding rules to support or drive this change.

But what about students exercising their right to choose online learning part time? States should guarantee this right, to ensure that students are not prevented from accessing ample online options. When schools cannot deny students access to part-time online learning, students may find themselves wanting an online option contrary to the wishes of their school. A high school, for example, may decide that it is teaching Algebra I to all students the old-fashioned way, face-to-face, with no blended learning. A student and family may decide the student would be better served learning online. The student is not in control of the school's budget and therefore is not in a position to decide what online option the school can afford. The state will have approved providers and courses through its charter-authorizing function. But this approval does not come with pricing. Prices should be determined competitively through transactions in the marketplace. But the student cannot decide how much of a school's money to spend in the marketplace. So, what can a student pay for an online course that is not selected or negotiated for by the school?

States should address this question by requiring school districts to calculate two different price ceilings available to students purchasing courses online. One ceiling would be for courses taken off school premises with computer equipment, broadband access, and all other needs met by the provider. A second and lower ceiling would be for courses taken on school premises, using school computers and broadband, with a school teacher as the teacher of record. A technical analysis would be necessary to get the price ceilings correct. State policy would specify how the ceilings would be calculated. In principle, the ceilings are set equal to the theoretical avoided cost, fully loaded, of a student taking an online course. Whether schools actually avoid the costs is their challenge. States should require schools to pay up to the level of maximum savings. Policymakers should bear in mind that market prices are likely to be driven below these ceilings as providers compete for school and district business. But, states cannot leave students to choose prices when they subscribe online individually.

Step 8: Exempt Online and Blended Teaching from Traditional Teacher Requirements Including Certification and Class Size

The above steps are designed to create competitive statewide markets for online learning. Students are guaranteed the right to choose online options full time in virtual schools, or part time in any school, most likely the brick-and-mortar variety. This new demand should be met by online schools and online providers, now encouraged to enter the market through a fair approval process crafted to reduce political obstructionism. Funding should provide encouragement as well—being neutral with respect to the method of instruction, online or traditional. These innovations correct the major impediments to supply and demand for online learning in public education today.

With one major exception. Teachers are the ultimate driver of quality in the traditional model of schooling. Nothing, at least within the control of schools, affects student achievement more than the effectiveness of the teacher providing the instruction. Over the span of only a few years, high-quality teachers can help students gain multiple deciles in the national achievement distribution.³³ The recruitment, development, and retention of high-quality teachers are therefore key to school quality in the traditional model.

Public policy, however, does not align well with what research tells us is necessary to build the best teaching force. Teachers must receive state certification to be

recruited into the classroom; yet, there is no evidence that certification identifies stronger teachers or even weeds out incompetence. Teachers are compensated based on seniority and advanced degrees that predict little or nothing about teacher effectiveness, certainly nothing after the first few years on the job. Teacher evaluations and rewards are not connected to student achievement. On top of these policies are union-driven collective-bargaining agreements that reinforce them and further prescribe and proscribe how teachers may work.

In recent years, reformers have tried to revise these policies. The Bush administration attempted to strengthen teacher certification through No Child Left Behind (NCLB). The Obama administration has encouraged states to link teacher evaluations to student achievement. Thus far these efforts have borne little fruit. Teacher policies remain largely as they have been for decades. This is problem enough, but it becomes ever more vexing with the advent of online learning.

Online instruction makes altogether different uses of teachers. Technology takes over many of the roles that teachers perform in traditional classroom instruction. Teachers then perform new roles, along with some of the established ones.³⁴ Because online instructional models are rapidly evolving, it would be most unwise for policymakers to try and prescribe an online teacher's role. It is not possible to say at this moment what constitutes "best practice." The International Association for K-12 Online Learning (iNACOL) has issued recommended standards for online teachers.³⁵ But these constitute only estimates of what online instruction requires—at this time. There is no research to validate the relationship between these recommended standards and student achievement.

Online instructional models take countless forms. Teachers may be assigned full responsibility for an online class and do everything that a teacher would do for the class if it were in a brick-and-mortar setting (except deliver the content, which is handled by technology): hold synchronous classes online, grade and comment on student work, provide individual tutoring, and contact parents when issues arise. But other models differentiate these roles: Different educators may tutor, grade papers, and serve as advisors.³⁶ Technology can also perform more or less of the instructional role, leaving less or more work for online teachers. In higher education, Capella University maintains twenty-to-one student-teacher ratios for its courses; Western Governors University employs ratios over double those.³⁷

Instructional models also vary with their use of face-to-face instruction. In K-12 education, blended models are likely to dominate. Students are already in facilities with teachers. Younger learners clearly need adult support and supervision. Various mixtures of online instruction and face-to-face interaction are all but inevitable. Today, with blended learning in its infancy, scores of models have already been documented.³⁸

The models vary in the role of teacher—facilitator of follow-up discussions, individual tutor, evaluator of student work, leader of small-group instruction. The models vary in the frequency of student-teacher interactions as well as the size of student groups. The models add new professionals and paraprofessionals to the mix—technology experts and lab facilitators, for example.

This is exciting, as it should be. The goal at this stage of technological innovation should be to find the most effective technology-infused instructional models for students. This can only happen through experimentation. But experimentation is not easy in public education, especially when it comes to the role of teachers and other staff. Policies and collective-bargaining agreements specify who is qualified to perform what instructional roles, what work teachers may do and not do, and what size classes must be—to name just the major few. Teacher policy and collective-bargaining agreements could easily stifle innovation in online learning, if flexibility is not built in from the outset.

State policymakers should therefore look carefully at teacher policy as it affects online learning. Most important, states should lift any class-size restrictions on online courses. The concept of a "class" assigned to a single teacher may not even be applicable. Policymakers should eliminate class-size restrictions on full-time online courses. For blended courses, in which online instruction constitutes at least half of the estimated time for course completion, policymakers should also eliminate class-size limits for the face-to-face portion. If a teacher can work with four groups of fifteen—for a class size of sixty—during each group's time off-line, let the teacher and school decide what is workable. If a school wishes to have students supervised in large groups—say two or three classes worth—in a large lab or media-center environment, do not impose class-size limits on the lab or require certified teachers to supervise students working online. These are just prime examples. The point is not to restrict innovation or impose needless cost by presuming what the role of educators working online or supporting online should be.

Policymakers should remove or avoid unnecessary restrictions on teacher credentials as well. Teachers working fully online should not be required to hold traditional state teacher certifications. Teacher roles online vary with the instructional model. Providers should be able to hire anyone with at least a bachelors degree (and no criminal record), and train them for the instructional role required by their model. Online teachers should not be required to satisfy new certification requirements either—such as those proposed by iNACOL. We simply know too little at this time to require traditional certification, let alone brand new certifications. In time, research will demonstrate what teacher skills, knowledge, and attributes are associated with success by students. Then, training and certification requirements can be entertained.

Finally, online education is inherently not a state-bounded enterprise. Great instruction can be beamed into schools in any and every state from anywhere in the United States or the world. States should want their students to be able to take advantage of the best that the United States, or the world, has to offer. State policies must therefore walk the fine line between protecting legitimate state interests and opening the state to valuable contributions from the outside. Teacher-certification laws have the potential to insulate states from worthy external support.

Online providers have an interest in finding the very best teachers (and other staff) to work with students online. Providers also have incentives—economies of scale—to build online instructional systems that can serve students in as many locations as possible. Providers want their teachers to be able to work with students in whatever state they may live. It may not be efficient or even feasible to run a low-demand online course for students in just one state. To use an obvious example, an AP Calculus teacher can work as effectively with a student in New York as in California. But state certification rules not only require that teachers be certified; they require they be certified *in the state in which they are teaching*. If online teachers must be certified in every state from which their students are enrolled, online-teacher preparation then becomes very expensive (getting certified everywhere) or very inefficient (teaching only students in single states). This problem is easily rectified. States can either require no state certification for online teachers, or states can recognize or offer reciprocity for teacher certification in all other states. The former is preferable, as it opens the possibility of international teachers helping students in the United States.

Step 9: Establish Student Learning as the Foundation of Accountability for Online Schools and Providers

Online education provides a golden opportunity for policymakers to focus schools more attentively on student achievement. The very point of creating a vigorous market for online education is to maximize innovations in online and blended models—that *raise student achievement*. Neither experts nor policymakers now are in a position to say just how future schooling should be organized to best employ teachers and technology. So, policymakers are urged to create a market-based system that will promote experimentation and innovation—in pursuit of student learning. To ensure that the market makes learning its top priority, states should then carefully specify their goals for student achievement and measure how well students, providers, and schools are achieving them.

States have already made great strides in this direction. They only need to continue—and make some important additions. States now have nearly two decades of experience writing academic standards, developing student assessments, and implementing accountability systems for schools. Research has now documented that these practices, when well-designed, can be effective in raising student achievement.³⁹

States should continue with efforts to raise their academic standards, to align them with the ultimate goal of graduating students from high school ready to succeed in college or an immediate career. They should cooperate with national consortia, such as the Common Core State Standards Initiative, trying to develop standards for multiple states. In an online environment, where providers can serve students nationwide, progress is abetted by shared standards that allow developers to focus resources on one high-quality program for many states, if not the entire nation. The Common Core project is encouraging online providers to build programs for the forty-seven states (including D.C.) that are now part of that endeavor. States that are part of Common Core will likely see more resources directed toward the development of programs for them than states tackling new standards on their own. All states should continue, as well, with efforts to design assessments better matched to higher standards and to adjust accountability systems to measure student academic growth.

This work is all the more important—and urgent—in an online environment. The measure of success for any and all technological innovations should be

improvement in student learning.⁴⁰ As schools and providers try out new models, their effects on student achievement should be carefully recorded and examined—a natural offshoot of the online-learning model. Online systems record every bit of data about how students have interacted with online lessons, how they have performed with ongoing formative assessments, how they have responded to online tutoring, and in the end, how they performed on final projects and assessments. Online databases are treasure troves of information about instruction and its impact on achievement.

States can gain maximum advantage from this resource by creating standardized examinations for all courses in a state's core high school curriculum. Students could be required to pass the state exam to receive credit for each course toward a high school diploma. The exams could be delivered online. Their content could be part objective, closed-ended, electronically scored items—ready-made for online courses—and part extended-response questions or problems, scored by state-led teams of online and traditional teachers. For academic standards below the high school level, states should consider using their grade-level reading, math, and science assessments to award grades or credit. States should also consider requiring end-of-course exams for credit in brick-and-mortar and blended courses.

Assessment policies in traditional schools are a larger issue—and should follow the same guidelines as for online courses. But assessment policies must be addressed up-front for online learning if virtual schools and providers are to be driven in the desired direction—of raising student achievement. Online learning cannot be assessed using the traditional model of course credit—namely seat time. Online learning is inherently performance based. Students are given content to learn and are assessed on their mastery. When they master one piece, they move on to the next piece. Students should be allowed to move on at their own pace and depending on the content. If mastery is demonstrated, it makes no difference whether a student required an hour to succeed or a week. Some students may complete a semester-long course in a month; others may require more than the normal four months. It should make no difference to state authorities how long a student required to achieve mastery.

The easy recommendation for policymakers is to eliminate seat time as a requirement for earning credit for a high school course or recognition for completing a

lower grade-level subject.⁴¹ Full-time online courses should not have seat-time requirements for high school credit. The harder question is: On what basis, then, should states, through charter authorizers, approve the awarding of course credit? One model is simply to leave the decision to award credit in the hands of authorized schools and providers. If XYZ virtual school or ABC online provider is authorized or licensed to educate students in the state, it will present its methods of assessment to the authorizer and, once approved, be the arbiter of successful student achievement. This is certainly defensible, though policymakers may be uneasy at the prospect of students winning course credit with little “seat time” invested.

A stronger model would put online students to a standardized test. Then, credit would not be at the discretion of an online school, provider, or teacher. All online instruction would be held to a common standard, which the state would set and enforce. The Sunshine State does this already for courses taken by students at Florida Virtual School. Students cannot earn credit unless they pass. Details would need to be worked out for any mandatory testing system. Course grades may be at the discretion of the online teacher but credit dependent on the state test. Students may be given multiple opportunities to pass the state test. Schools may be given the opportunity to appeal failed tests by presenting student coursework. States, of course, would have to show the courage to set high standards in their tests, if those tests were to drive higher quality effectively. These are familiar issues in debates over high school end-of-course exams and competency testing in general.

But the difference here is the online environment. Students will frequently be taking courses—both part time and full time—that are removed from the direct oversight of teachers. The progress of these pupils must be assessed rigorously to ensure that they have actually achieved. States should err on the side of objective assessment. On the more positive side, state policymakers are setting the wheels in motion for major technological innovation. They should want to ensure that innovation is for the purpose of higher achievement. The online environment makes testing easy. With learning properly measured, online databases provide a wealth of information to make instruction better still.

If students enrolled in online schools or even online courses are required to pass state tests to earn credit, arguably students in all public schools should face similar standards. One could argue that the online

environment presents a unique accountability challenge and therefore merits special assessments. States might embrace this argument and use the online environment as a way to pilot course assessments for all students and schools. But in the end, performance-based accountability should apply regardless of the modality of instruction.

A similar perspective applies to a final opportunity to employ performance-based accountability. Funding for online courses might depend on student passage of a state exam. Florida Virtual follows this practice already. The sending district does not pay the online school until the student passes a state exam. Performance exams certainly provide this opportunity for leverage. States are encouraged to experiment with performance-based compensation. They should not limit the experimentation to online schools. Brick-and-mortar institutions might benefit from similar discipline.

Step 10: Address Market Imperfections by Providing Abundant Information to Students, Families, Schools, and Districts

Public education is not a naturally occurring market; the argument here is to make it more so. Certainly for the delivery of online learning, private enterprise, competition, and resources available worldwide have the potential to drive innovation much faster than any system operated directly by the government. The preceding recommendations are designed to establish the conditions for supply and demand, satisfying as far as possible the economic conditions of a perfect market, albeit a publicly created one. Yet no market is perfect. And policymakers must stand ready to correct market imperfections that may arise.

In higher education, we have seen significant problems with student outcomes. Providers, both for-profit and nonprofit, responded to government subsidy incentives, mainly in the form of federal loan programs, to educate tens of thousands of students who had not been served well by colleges and universities in the past. But many students were not served well by the new entrants, either, and the federal government has stepped in with regulations that require schools to raise student success rates, or not receive federal dollars. In K-12 online learning, policymakers will need to be on the lookout for performance issues as well. By setting academic standards for online schools and providers, and requiring students to pass state tests to receive credit, policymakers are taking major steps to ensuring performance. But as we know from both traditional schools and brick-and-mortar charters, assessment and

accountability are no guarantee of strong academic performance.

Regulators—specifically state authorizing and licensing bodies—will need to be tough in approving providers, vigilant in overseeing them, and strict in enforcing standards for renewal. Experience in authorizing traditional charter schools for two decades, and online charter schools for the last decade, should prepare these public overseers to handle this expanded role better than any new entity the state might conceive.

Nevertheless, no government entity can ever manage the behavior of the various players in a marketplace. And policymakers need to appreciate this basic fact. The reason to set up a publicly sponsored market in the first place is to obtain better results than government can achieve directly. So, policymakers should do everything possible to create the conditions for the market to do the hard work of driving change, and not overburden regulators with work that better market controls could accomplish more successfully.

The most powerful tool that regulators have to help the market do its work is *information*. The better informed parents and students are about their choices in online learning, the more likely they are to choose quality providers and online schools. They are not the only consumers, though. This is important to appreciate. Traditional public schools, charter schools, and school districts, potentially more sophisticated consumers than families, will be making many, perhaps most of the decisions about online providers, as they offer online and blended options to their students. Schools and districts need information about online providers besides the promotional literature of the providers themselves. All decision-makers need objective information about the educational attributes of online programs, especially including the achievement of students enrolled in them. Schools and districts also need financial data, so that they can obtain economic value.

States have a decade or more experience now providing information to families about school quality. States are required by the federal government to provide school report cards with essential data about teachers, test scores, graduation rates, safety records, and the like, on a state website. Federal and state accountability systems rate schools with letter grades or improvement statuses—so-called Adequate Yearly Progress (AYP) under NCLB. These information systems are a good start toward what states could and should require to be reported by online schools and

providers. These public sources of information will likely be supplemented by private sources, like GreatSchools, for which there will be a growing market.

As part of its recommended online policy, states should have a *transparency* requirement. Such a requirement would call for the expansion of the state report cards to include licensed online providers as well as online charter schools. The report cards would include all currently required data. This information would be supplemented with data unique or at least especially important to judging online performance. Suggestions include: persistence rates by course; average time to complete courses, by course; average score for first-time test takers on state end-of-course tests; average hours of teacher contact with students, by course; and student re-enrollment rates, year on year. In addition, report cards should include summaries of all subjects offered, instructional methods employed asynchronously and synchronously, formative assessment methods, and tutoring and advising practices.

At the outset, states could rely on the power of information to drive improvement. The more districts, schools, parents, and students know about the track records of online schools and providers, the more they will choose proven options over uncertain ones. In time, states may be able to set performance standards that providers must meet to remain eligible to work in the system—along the lines of AYP, but focused on course success. The federal government has just adopted such standards for for-profit colleges and universities. States could eventually set minimum standards for persistence rates or test-score performance at the course level, for example. By shining a bright light on performance, state policymakers can get the maximum out of market forces and limit the burden on state authorizers.

In the end, it is impossible for policymakers to correct every market failure or imperfection. The state cannot prevent some parents (or schools) from choosing an inferior online option. Bad decisions get made even when information to make better decisions is ample. The state cannot prevent online schools or providers

from offering less-than-optimal programs or cutting corners to save money. The state can take measures to mitigate these risks, as recommended above, through rigorous authorization, licensing, and performance-based accountability—as well as by providing lots of information. But policymakers will promote far more innovation in education technology if they allow market forces to drive change, subject to government oversight, however imperfect, than if they allow government oversight, by local school districts, to remain in control.

Taking Resistance Seriously

The needs of K-12 education are well aligned with what online technology today has to offer. The potential of online education to do even more is greater still. There are a range of challenges ahead, including all that stymie traditional schools—quality teachers, involved families, motivated students, higher standards, and more. But the biggest challenge may well be the K-12 system of education itself. It has formidable powers to protect itself from disruptive change. Technology will eventually break down the resistance, offering benefits, here and there, that are just too good to turn down. But it will take a long time—and a longer time than necessary.

State policymakers could change this. They can look to America's more innovative model of higher education for guidance. But in the end, policymakers will need to take seriously the fundamental nature of the challenge.⁴² Technological innovation, new approaches to teaching and learning, and higher levels of achievement will not come to public education—at least any time soon—without reforms that break down the system's inherent resistance to technology. The surest way to do this is to shift control of K-12 online learning from the political powers that now favor the resistance to a market-based system of control that better allows the most effective solutions to emerge. The market is no panacea. It will require close government oversight. It will also provide incentives for innovation and improvement that the current system of governance never will.

¹ National Center for Education Statistics, *The Condition of Education 2010* (Washington, D.C.: Institute of Education Sciences, U.S. Department of Education, 2010), Table A43-1.

² Anthony G. Picciano and Jeff Seamon, *K-12 Online Learning: A 2008 Follow-up of the Survey of U.S. School District Administrators* (Newburyport, MA: The Sloan Consortium, January 2009).

³ For a thorough overview of the instructional virtues of online learning, see Matthew Wicks, *A National Primer on K-12 Online Learning, Version 2* (Vienna, VA: International Association for K-12 Online Learning, October 2010).

⁴ Barbara Means, Yukie Toyama, Robert Murphy, Marianna Bakia, and Karla Jones, *Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies* (Washington, D.C.: U.S. Department of Education, revised September 2010); see also John Watson et al., *Keeping Pace with K-12 Online Learning: A Review of Policy and Practice* (Durango, CO: Evergreen Learning Group, 2011).

⁵ Terry M. Moe and John E. Chubb, *Liberating Learning: Technology, Politics and the Future of American Education* (San Francisco, CA: Jossey Bass, 2009).

⁶ Clayton M. Christensen, Michael B. Horn, and Curtis W. Johnson, *Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns* (New York: McGraw Hill, 2008).

⁷ Watson et al., *Keeping Pace*, 21. See also Margaret Lin, "Authorizing Virtual Charter Schools: Guidelines for Ensuring School Quality in the Cloud," NACSA Issue Brief, Cyber Series, October 2011.

⁸ Bryan D. Ray, *2.04 Million Homeschool Students in the United States in 2010* (Salem, OR: National Home Education Research Institute, January 2011).

⁹ Eduventures, "Hot Programs, Hot Markets" (presentation at Pearson Learning Solutions Summit, Las Vegas, NV, December 9, 2009).

¹⁰ National Association of Charter School Authorizers, *An (Updated) Primer on Virtual Charter Schools: Mapping the Electronic Frontier* (Chicago: NACSA, September 2011). D.C. was not included in this tally. The District has one virtual charter school serving K-8; D.C. law doesn't fund any other schools. For more, see "Measuring Up to the Model: A Tool for Comparing State Charter School Laws—District of Columbia," National Alliance for Public Charter Schools, <http://www.publiccharters.org/law/ViewState.aspx?state=D.C.>

¹¹ Ambient Insight, *2011 Learning Technology Research Taxonomy* (Monroe, WA: Ambient Insight, September 2011).

¹² Watson et al., *Keeping Pace*, 28.

¹³ This number is based on a course load of six courses per semester.

¹⁴ Moe and Chubb, *Liberating Learning*, chapters 3 and 5.

¹⁵ See "Florida Virtual School Quick Facts," Florida Virtual School, <http://www.flvs.net/areas/aboutus/Pages/QuickFactsaboutFLVS.aspx>; and Watson et al., *Keeping Pace*.

¹⁶ National Center for Education Statistics, *Digest of Education Statistics, 2010* (Washington, D.C.: U.S. Department of Education, 2011).

¹⁷ Research already demonstrates benefits of competition in the current world of K-12 education, from charter schools and private schools, and among school districts. For a recent summary, see Caroline Hoxby, "The Potential of Markets in Primary and Secondary Education" (presented at the Clarendon Lecture Series, University of Oxford, February 7, 2011).

¹⁸ For case studies of political resistance, see Moe and Chubb, *Liberating Learning*, chapter 5.

¹⁹ If states choose to create their own virtual schools, like FLVS, they will need to ensure that such entities play by the same rules as other providers and are given no competitive advantage.

²⁰ "Number of Public Charter School Students in U.S. Surpasses Two Million," National Alliance for Public Charter Schools, December 7, 2011, <http://www.publiccharters.org/pressreleasepublic/default.aspx?id=643>.

²¹ Ambient Insight, *2011 Learning Technology*.

²² National Association of Charter School Authorizers, *Principles & Standards for Quality Charter School Authorizing* (Chicago, IL: National Association for Charter School Authorizers, 2010). See also Susan Patrick and Tom Vander Ark, "Authorizing Online Learning" (Chicago: NACSA Viewpoint, August 2011).

²³ See, for example, Nelson Smith and Paul Herdman, *Built for Quality: The Capacity Needed to Oversee Charter Schools*, Authorizer Issue Brief No. 3, (Chicago: National Association of Charter School Authorizers, June 2004).

²⁴ Watson et al., *Keeping Pace*, 22, 24. Calculated by dividing K12 Inc. enrollment by total full-time virtual charter-school enrollment, as K12's students are all enrolled in charters.

²⁵ Gary Miron, Jessica Urschel, Mayra A. Yat Aguilar, and Breanna Dailey, *Profiles of For-Profit and Nonprofit Education Management Organizations: Thirteenth Annual Report* (Boulder, CO: National Education Policy Center, January 2012).

²⁶ See Rick Hess, "Quality Control in K-12 Digital Learning: Three (Imperfect) Approaches" (Washington, D.C.: Thomas B. Fordham Institute, July 2011), in this series.

²⁷ For a comprehensive view of the issue, with contributions from numerous leading economists, see Eric A. Hanushek, ed. *The Economics of Schooling and School Quality, Vols. 1,2* (London: Edward Elgar Publishing, Ltd., 2003).

²⁸ For an extended discussion of this approach to funding online education, see Paul Hill, "School Finance in the Digital-Learning Era" (Washington, D.C.: Thomas B. Fordham Institute, November 2011), in this series.

²⁹ Tamara Butler Battaglini, Matt Haldeman, and Eleanor Laurans, "The Costs of Online Learning" (Washington, D.C.: Thomas B. Fordham Institute, January 2012).

³⁰ For a detailed analysis of costs, see John E. Chubb, "More Productive Schools Through Online Learning," in *Stretching the School Dollar: How Schools and Districts Can Save Money While Serving Students Best*, eds. Frederick M. Hess and Eric Osberg (Cambridge, MA: Harvard University Press, 2011); and Battaglini, Haldeman, and Laurans, as well as Hill, in this series.

³¹ *Measuring Up to the Model: A Tool for Comparing State Charter School Laws* (Washington, D.C.: National Alliance for Public Charter Schools, 2011). See also Meagan Batdorff, Larry Maloney, and Jay May, *Charter School Funding: Inequity Persists* (Muncie, IN: Ball State University, May 2010).

³² Pennsylvania Code 24 PS 17-1725-A "Funding for Charter Schools."

³³ For estimates, see William L. Sanders and S. Horn, "Research from the Tennessee Value-Added Assessment System (TVAAS) Database: Implications for Educational Evaluation and Research," *Journal of Personnel Evaluation in Education* 12, no. 3 (1998): 247-56; and Steve Rivkin and Eric A. Hanushek, "Teachers, Schools, and Academic Achievement," *Econometrica* 73, no. 2 (2005).

³⁴ See Bryan Hassel and Emily Ayscue Hassel, "Teachers in the Age of Digital Instruction" (Washington, D.C.: Thomas B. Fordham Institute, November 2011), in this series.

³⁵ iNACOL, *National Standards for Quality Online Teaching: Version 2* (Vienna, VA: International Association for K-12 Online Learning, October 2011).

³⁶ Moe and Chubb, *Liberating Learning*, chapter 4.

³⁷ Education Database Online, <http://www.onlineeducation.net/> (accessed January 10, 2012).

³⁸ For sixty such examples, see Michael B. Horn and Heather Staker, *The Rise of K-12 Blended Learning* (Mountain View, CA: Innosight Institute, January 2011).

³⁹ Test-based accountability has proven a powerful tool for boosting achievement. For a review of the evidence and recommendations for improvement, see John E. Chubb, *Learning from No Child Left Behind* (Stanford, CA: Hoover Institution Press, 2009).

⁴⁰ Critics of online charter schools are already pointing to "low" test scores as evidence that full-time online education does not work—except for the companies that profit from it. However, rigorous experimental and value-added analyses of online charter schools have not been done yet. Online schools serve students who are "low" to begin with, making cross-sectional test scores an inaccurate measure of school quality. The answer to the controversy is better measures of how students perform course by course over time in online schools—and traditional schools. For criticism, see Stephanie Saul, "Profits and Questions at Online Charter Schools," *New York Times*, December 13, 2011.

⁴¹ This is also recommended by the National Association of Charter School Authorizers. See Patrick and Vander Ark, "Authorizing Online Learning."

⁴² For an equally fundamental set of recommendations, see "Nation's Digital Learning Report Card," Foundation for Excellence in Education, October 2011, <http://digitallearningnow.com/nations-report-card/>.