ORGANIZATIONAL MODELS FOR ONLINE EDUCATION: DISTRICT, STATE, OR CHARTER SCHOOL?

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APPALACHIAN TECHNOLOGY IN EDUCATION CONSORTIUM
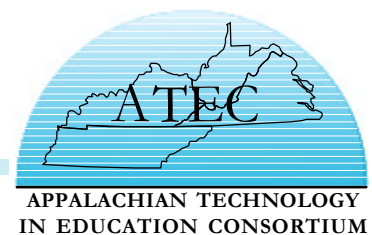
Foreword

Online education, done well, has the potential to expand the reach of high-quality K-12 education. In this paper, Linda Cavalluzzo reviews a range of organizational models for the production, delivery, and financing of K-12 "virtual schools" and assesses the strengths and challenges of each. This review and analysis of several virtual school programs is intended to help policymakers and program administrators at both state and local levels of government. More than twenty states are on record endorsing, sanctioning, or underwriting the full cost of virtual school programs. The Appalachian Technology in Education Consortium (ATEC) provided much of the support for the research conducted by Dr. Cavalluzzo. Several of her previous papers on this subject have been distributed to officials throughout the nation.

The number of online courses of study and virtual school programs is growing at a rapid pace. The number of students taking courses in an online environment, according to a number of analysts, has grown exponentially in the past few years. The U.S. Department of Education reports that some 40,000 to 50,000 students in 37 states are enrolled in one or more online courses. In spite of the enthusiasm and popular public support for virtual school programs, an increasing number of reports raise questions about the quality and cost-effectiveness of these nontraditional educational services, particularly when all courses are being taken in an online environment. Commonly raised questions include: How much to fund these projects? Who should provide the instruction? Who should foot the bill? Although most state legislators and state education officials recognize and accept the opportunities created by virtual schools, several have expressed concerns about the high costs and diversion of funds from traditional public schools to "cyber-charter schools" that are marketed and run by private companies.

Educational policymakers also admit that they need better information and independent analyses about what works and under what conditions for improving K-12 school policies and practices. On topics relating to online education, state school board members have met with ATEC and said that most of their counterparts around the nation are unaware or ill-informed about studies and reports that have focused on virtual schools, cyber-charter schools, and e-learning. Hundreds of papers are published every year that

tout e-learning as an effective way to extend opportunities for learning, or as an inexpensive way to deliver advanced placement and foreign language courses. Fewer reports seem to conclude that online courses don't always measure up to the expectations of program advocates. Reports from several states indicate that promised educational services from cyber-charter schools, including instructional materials, computers, and Internet access, were either inadequate or withheld.

Among the articles and reports on virtual schooling that we reviewed, few could be categorized as "independent research." Moreover, hardly any focused on the overall costs and consequences for maintaining and operating alternative state-sponsored models. ATEC also found that many states and school district officials have the impression that the adoption of non-classroom-based programs translates into lower overhead costs and savings on a host of services that otherwise support traditional classroom instruction. Policymakers need to look beyond the prospect of reducing per-pupil expenditures.   At the outset, we urge state boards and legislatures, in particular, to demand a detailed analysis of the costs associated with the maintenance of multiple virtual school program options. According to Dr. Cavalluzzo, it's terribly important for the leaders of each state to appreciate the effects that a virtual school program will have on the state's policies for "adequacy" and for the equalization of educational opportunities for all students. The goals of the program they choose will affect the size of a virtual school and should play a role in determining its structure and processes. Regardless of goals, however, quality, cost, and equity considerations suggest an important leadership role for states in the development of online programs.

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Introduction

Opportunities for online K-12 education are expanding dramatically throughout the United States. This paper describes some of the organizational models that have been developed to provide online education to public school students, including their key strengths and challenges. The review is intended to help state and local school officials weigh such issues as cost, finance, access, and effectiveness as they consider alternative organizational models for delivering online education to their students.

Critical Issues for State and Local Education Decisionmakers

Yardsticks for Selecting an Organizational Form for Online Delivery of K-12 Education: Goals and Costs

Program goals. Within the United States, practically every state constitution includes equal protection and education clauses that require states to furnish what is variously described as an "ample," "efficient," or "thorough and efficient" public education system [1]. Nevertheless, many students are underserved by their public education system, and average student achievement varies widely. Educational resources and academic options are distributed unevenly across states; among urban, suburban, and rural districts, within states; and among schools serving students from high- and low-wealth neighborhoods within individual districts [2]. Against this backdrop, online education offers extended opportunities for learning that have the potential to cut across geographic and political divides and shrink differences among them. Virtual schools can bring courses to students who, for a number of reasons, may not be able to attend traditional brick and mortar schools, including those who are homebound, have dropped out, or have been expelled or incarcerated. In addition, online programs can offer supplementary services, such as test-preparation for high-stakes exams.

For students whose parents had previously chosen traditional private schools or homeschooling to meet their children's needs, online education has the potential to bring them back into the public school system. Parents who homeschool, in particular, have been attracted to the curricular materials, computer

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hardware and software, and instructional support their children can receive—often without cost—while continuing to learn from home. Although homeschoolers make up a tiny share of school-age children, formerly homeschooled students may account for 40 percent or more of total course seats in online programs [3, 4].

In short, online education, if done well, is a promising approach for expanding the reach of high-quality public education. State or local education agencies that are considering offering an online program should begin by assessing their needs and determining their goals. Once needs are assessed and goals are determined, it will be easier to think about the likely size of the program and how it should be structured. A program's organizational structure, policies, and internal processes will affect factors such as cost, financing, student access, and program effectiveness. Establishing a program to expand options or improve quality of education for students who now attend public schools, for example, may have costs that are quite different from costs associated with reaching an unserved, special population.

Understanding costs. Key elements of an online program include (1) courseware, platform, and delivery system, (2) instruction, and (3) management and administrative functions. These functions include, for example, course registrations and recording of grades, hiring and training personnel, evaluating and approving course materials, and negotiating with vendors. Management and administrative functions, as well as platform and delivery systems create fixed costs (that is, costs that are about the same over large ranges of enrollments). Courseware will also create fixed costs if it is developed internally or if it is purchased from another provider. Like other fixed costs, a large one-time expenditure will be required, but that expenditure will shrink on a per-course-seat basis, as enrollments increase.

Alternatively, courseware can be leased from other districts, from state education systems, or from commercial providers on a per-seat basis. This approach avoids the need for an initial investment, replacing those fixed costs with pay-as-you-go operating expenses. The number of expected enrollments is an important consideration in deciding whether to develop, buy, or lease courseware.

The amount that different providers spend on the development of courseware varies widely. The district-based CCS Web School in Fayetteville, North Carolina reports that it uses standard templates and teachers who are experienced in course development, and it spends $1,500 per course [5]. Within Virginia, Prince William County spends $4,500 per course to compensate two- or three-teacher teams for course development [6]. In her "how to" book, Shawn Morris reports spending $4,000 per course at her

district-based charter school in Wichita, Kansas [7]. At the high end, Julie Young, Executive Director of the Florida Virtual School, reports expenditures ranging from $50,000 to $100,000 per course. APEX Learning, a commercial developer of foreign language and AP courses, makes similarly large investments in courseware development.

The wide range of expenditures for course development suggests that the quality of curricular materials also varies widely. With greater investment, course developers can exploit Internet technology more fully and create new types of student-centered learning experiences that work interactively to draw students in and capture their imagination. Presumably, these investments yield returns in the form of higher course completion rates, greater learning, and expanded capacity to reach a wider range of students. However, analyses of effectiveness are needed to better understand the relationship between courseware and implementation features and student success.

Salaries for instruction are the largest source of variable costs, costs that increase with enrollments. Many virtual schools that are operated by districts or states place no more than 20 to 25 students per teacher in an online high school class. Program directors believe that frequent communications, assignments, and feedback are key to successful course completions [8]. Low student-teacher ratios permit teachers to communicate frequently with each student. Commercial providers of course-seats (courseware plus instructor) typically have higher student-to-teacher ratios, but they may require the school system to provide additional instructional support. Similarly, Internet-based "cyber-charter" schools, particularly for elementary students, expect parents to take on a significant instructional role. Therefore, the full cost of course-seats furnished by outside providers often is not captured by tuition rates or borne by those providers.

In school systems that are already equipped with workstations and advanced telecommunications networks, online education can get off to a quick start without large start-up costs by purchasing course seats from external providers or leasing courseware. Course-seat purchases are particularly attractive if the school system has an inadequate number of well-qualified teachers to lead instruction. However, wide variation in quality of courseware and level of instructional support makes it important to carefully evaluate such courses before adopting them.

Given the potentially high start-up costs associated with online educational programs and the significant potential for achieving economies of scale through large enrollments, it is not surprising that

state and regional initiatives, collaborative programs, and purchasing of services from large providers have emerged to meet student needs. In the next section, we look at a few district-level models, state-level models, and charter schools and discuss advantages and challenges associated with each.

Organizational Models for Online Education[1]

District-Level and Consortium Models

District as course developer: Going it alone. A school district may choose to develop its own courses to meet its particular needs and standards for quality. The advantage of this approach is that the district would have complete control over what is produced and for whom. Among the disadvantages are the district will need to invest resources into learning how to set up a program and how to launch, manage, and evaluate that program. The district may face significant resource constraints that limit the quality of courses that can be developed and limit course development rates. Districts such as Prince William County in Virginia, for example, charge tuition to cover costs of courses. Other districts, such as Fairfax County in Virginia, offer courses that are free to public school students within the district as long as they do not create a course overload, but they charge tuition to others.

Consortium approaches: Bartering content with minimum design standards. Rather than going it alone, districts with common curricular requirements could form a consortium and barter courses that they develop. This strategy would reduce course-development costs faced by individual districts and speed access to a richer menu of courses.

Barter systems that try to preserve district autonomy by setting minimum standards for design present a number of challenges. Differences in the size of districts and in their reasons for interest in online education will affect the size of their target audience. Moreover, there are likely to be wide disparities in available funding between high- and low-wealth districts. Both factors are likely to affect the amount that districts choose to invest in course development. If those investment differences are large, districts are likely to produce content that is very different in quality. Other things being equal, high-

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[1]The organizational models described here are representative and intended to highlight the strengths and weaknesses of various institutions that furnish online education. However, the organizational forms are not intended to be complete, and various organizations described here are not mutually exclusive. For example, charter schools can be authorized by states, local school boards, universities, or non-profit organizations. States may choose a district to provide services throughout the state, set up a not-for-profit institution, or create an organization within the state's university system.

wealth districts are likely to invest more than others on a per-course basis and may not see an advantage to trading their course materials for curriculum from lower-wealth districts that they judge to be of inferior quality. Unless these differences can be overcome, it will be difficult to launch and sustain successful bartering agreements.

Other difficulties accompany courseware barter models. If each district supplies its own teacher, there is likely to be excess capacity in online classes. Excess capacity could be reduced, and cost per course-seat lowered, if districts barter course-seats (spaces in instructor-led online courses) rather than limit their trades to courseware. Whether districts swap courseware or course seats, a central administrator would be desirable in a barter system to keep track of trades among districts. In addition, a central administrator could be used to capture scale economies for collaborating districts: in administration, advertising and website management, data collection, record keeping, development and adjudication of policies pertaining to inter-district exchanges, and negotiation of prices for services from external suppliers.

Consortium approaches: Bartering content with common design standards. In contrast to the bartering model described above, in which each district retains maximum autonomy to develop content in accordance with its own needs and standards, bartering districts could agree on common design standards for courses. A system that used common design standards would require the same per-course commitment of resources from participating districts, eliminating imbalances among them in course quality. This attribute is likely to be necessary to any successful bartering arrangement. Having made the commitment to agree on common design standards, course development would be coordinated, so that resources are not wasted developing many versions of the same course. The Virtual High School (VHS) is a broad-based consortium that conforms to this basic design. In this case, schools pay a participation fee to join the consortium, provide a consortium-approved course and a consortium-trained online instructor, and receive in return access to 25 course-seats in any class offered by the consortium. Member schools come from 21 states and 9 countries (www.govhs.org).

Inter-district markets. Districts could avoid problems associated with bartering by buying and selling course-seats or leasing their courseware from one another. Districts that want to trade courseware but retain the flexibility to create courses that meet individual standards for design could stipulate minimum standards for content and set prices for the use of their content. An advantage of a market with multiple producers is that high- and low-wealth districts could participate in this market, as buyers or

sellers. Indeed, any district could participate whether or not they produce content themselves, so access would be wider than under strict barter schemes. For sellers, revenue in excess of operating costs, from the sale or lease of content (or course-seats), could be reinvested to expand their course development efforts. In addition, if course seats are widely available, courses can be more easily filled to capacity, reducing variable costs per seat.

Because different provider districts will make different design and investment decisions, a range of prices for content and a range of content choices could emerge. This range will provide consumer districts with more options when selecting web-based courses for their students.

There are drawbacks to an inter-district market approach. First, because of the substantial fixed costs associated with producing and offering courses, potential producer districts may quickly drop out, leaving just one or two to furnish services for all of the others. Even if a competitive environment with multiple district providers was achievable, it would tend to sustain inequities across districts in the quality of the online education furnished to students in high- versus low-wealth districts. This is a major shortcoming for a technology that has the ability to reduce resource inequities associated with traditional brick and mortar schools. In addition, in the absence of external funding sources, even relatively wealthy districts that produce content are likely to invest less in course development than better-funded commercial courseware developers or state providers. Finally, by replacing coordination with competition among districts, multiple versions of high-demand courses are likely to emerge, possibly reducing availability of low-demand courses in online programs.

State-Level Models

The potential for significant cost savings through economies of scale and the need for an organizing agent or administrator to help realize those economies are suggestive of the advantages that state-level models can have over district programs. In addition, state-level programs can eliminate across-district inequities in quality of content and instruction as long as access can be ensured.

Because districts are the normal providers of educational services, it is important to consider the implications of alternative financing strategies, if online education is to be provided by a state-run virtual school.

Financing options and implications. Cavalluzzo and Higgins [9] discuss different ways for state-sponsored programs to allocate costs among states and districts and how policymakers can use different choices to reach goals for their online education program. If state leaders want to expand their program quickly, they could provide courses at no cost to districts or their students, as Florida has done, or even pay districts to try some of their online classes. By providing classes below cost, states will encourage districts to test the quality and effectiveness of online courses for themselves. Below-cost pricing could encourage experimentation and lead to innovative ways to use online education to improve student outcomes.

Once the uses and effectiveness of online courses are well understood, state-sponsored programs could charge districts prices that cover their costs per course seat. This price would encourage districts to use online education when it makes economic sense to do so, for example, when a traditional course would not have enough students enrolled to justify a traditional teaching slot. In Michigan, for example, the state's online programs began with an initial state investment that shifted within 18 months to local funding. Charging districts for courses is important because, in general, districts buy the resources they need to educate students, and, within regulatory constraints, choose the mix of resources that best meets their educational needs and budgetary constraints. In the absence of charges for online courses, districts will be more likely to overuse state-furnished online courses.

State leaders who want to make online courses available statewide but are unconcerned about the rate of program growth or do not want to incur the associated costs for encouraging growth could charge districts for access to course seats at the outset. The state-operated Kentucky Virtual High School (KVHS) has taken this approach.

State as broker: A low-investment approach. It is possible for a state to set up an online school with little investment by simply acting as a resource broker and executive agent for such a program. In this model, the state sets policy; identifies, evaluates, and qualifies service providers; approves specific courses; and negotiates statewide prices for services. Local districts purchase course-seats from approved providers at these negotiated prices. In addition, the state may advertise the programs, offer scholarships to encourage their use, and collect and analyze data to support program improvement. West Virginia Virtual School (WVVS) employs this type of model. Its distance education policies can be found online at http://wvde.state.wv.us/policies/p2450.html/.

An advantage of a state-as-broker approach is that the state can realize scale economies in administration and in negotiations for services. Such a program can be started quickly, because no time is needed for course development, and at low cost to the state. Through the state department of education's approval process, the quality of courses and their alignment with the state's instructional and content standards can be ensured. The challenges associated with this approach can include difficulty finding content that aligns with state standards and getting courses evaluated and approved quickly so they can be made available to students.

State as producer: Invest now and save later. Several states produce their own content and supplemental educational services or use a mix of in-house developed and purchased products to meet their needs. This approach requires a large up-front investment, but it can reduce long-run costs. A number of different financing strategies can be used to pay for state-produced programs.

Florida Virtual School: A tuition-free approach. Florida Virtual School (FLVS) is by far the largest state-run online secondary school. Established in 1997, the school used large state appropriations over several years to create a full-service apparatus with 75 online courses. The school does not charge tuition to in-state students, and access is open, whether those students attend public, private, or home schools. Students register directly on the FLVS website. They log into their courses from outside traditional school-houses ("anyplace") and must have access to a computer and the Internet.

To help fund the program, FLVS sells access to its courses, and other products and expertise, to out-of-state customers. The advantage that state lawmakers see to their fast-growth approach is that, over the long haul, profits that are derived from sales to out-of-state customers can be used to subsidize costs to state taxpayers for education. In addition to tax savings, lawmakers see the "anyplace" aspect of the online program as a way to reduce the need for new schoolhouses to accommodate their growing school-aged population.

Even though Florida's courses are free, early evaluators found that minority students were substantially under-represented compared to the demographic mix of the state's school-aged population [3], a finding likely associated with the out-of-schoolhouse approach, which limits access to those who can find computer and Internet facilities on their own. In addition, the evaluators found a disproportionately high

representation of homeschooled students. Moreover, each homeschooled student was likely to enroll in more courses, on average, than traditional students.[2]

Tuition-based and subscription programs. States such as Kentucky have launched online schools with a modest state appropriation and have financed ongoing costs through tuition that may be paid from school or district budgets, or passed along to students. In its initial implementation period, Kentucky Virtual High School reported that principals in traditional high schools were reluctant to enroll students in tuition-based virtual courses because of uncertainties about the new form of delivery and the potential for escalating expenses [9].

Michigan set up a private, not-for-profit corporation called Michigan University to operate its state program. Michigan Virtual High School (MIVS) began with a large state appropriation, but it now operates on revenue derived from by-the-course tuition charges and from a subscription membership system for local schools. Member schools receive 60 course-seats plus unlimited access to test review tools for high-stakes 11th grade state exams, AP tests, and college entry exams (ACT, SAT, and PSAT). In addition, each subscriber school receives onsite training and implementation services, as well as a scholarship to train one teacher in online education methods [10].

Cyber-Charter Schools

Almost 60 cyber-charter schools are now operating in 13 states [11]. This number can be expected to grow because cyber-charter schools provide another choice for students who attend schools that fall short of goals for adequate yearly progress under the No Child Left Behind Act. Charter schools may be authorized by districts, states, universities, or not-for-profit institutions.

An advantage of a charter school approach to furnishing an online education program is that charter schools have more freedom from regulation than other public schools in setting up innovative programs. Some programs, such as Odyssey K-8 Charter School in Las Vegas, offer designs that blend primarily online education with weekly face-to-face home visits from a charter-school teacher who provides curricular guidance to parents and ensures that students make continuous progress. Other charter schools have a limited number of teachers available to answer questions, but they rely heavily on parents to coach students, and they are arguably closer in design to traditional correspondence courses.

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[2]An estimated 1 percent of Florida students were homeschooled in 1998, yet homeschoolers accounted for 42 percent of total FLVS enrollments in 1999 [3, page 135]. States such as Illinois and Michigan have written policies that bar homeschoolers from free access to online courses. Florida recently passed similar legislation for its cyber-charter school program, but, as a result of an ambiguity in the law, the requirement was not enforced by the state education department [12].

The same attributes of online education that could help mediate long-standing differences in access to high-quality public education—the ability to reach across geographic and political divides—are raising a wide range of complex and politically contentious issues for cyber-charter schools. For example, because cyber-charter schools offer full-time alternatives to traditional schools, they are far more likely to attract homeschooled students, who continue to learn from home, than students from traditional public schools.[3] The influx of students from homeschools into the public school system could destabilize funding for traditional programs (as occurred in Pennsylvania) or reduce resources for traditional programs [4]. The largest cyber-charter schools are not-for-profit entities that are tied to for-profit parent companies. Such schools provide curriculum and rely heavily on parents for instruction. In several states, they have attracted lawsuits from teachers' unions and public interest groups that challenge the legality of public funding for what, they maintain, amounts to private schooling [12].

Cyber-charter schools can bring educational resources to students who previously had been unserved by the public education system, but the full-time nature of most of these schools can preclude students in traditional public schools from taking individual courses online. Cyber schools that are designed in this way provide no benefit to students who may attend traditional public schools with limited or weak curricular options.[4] In addition, while cyber-charter schools often provide students with hardware, software, and an Internet connection, access still may be unbalanced across demographic groups because a disproportionate share of low-income students may lack parents at home who can oversee their child's activities. Policymakers must remain sensitive to such issues by monitoring enrollments and responding to inequities through program design changes as needed.

States such as Florida have looked to cyber-charter schools as a way to reduce the cost of public education. Florida initially estimated savings up to $700,000 from the 1,000 K-8 students who, in the pilot program, could move from a traditional public school to one of two state-authorized cyber-charter schools. Even if those savings could be realized, however, they may not be in the best interests of students or taxpayers. Because of an unanticipated influx of students who were not previously enrolled in public schools, the pilot program may cost state taxpayers a million dollars [13].

It is incumbent on state legislators who seek to create savings for taxpayers to do more than compare the cost of traditional brick and mortar schools with the expense of a proposed online charter

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[3] Morris [7] notes that many students in Wichita who homeschool do so for only a brief time and often have gaps in their achievement when they return to public schools. Online programs can help students by addressing these deficiencies.
[4] Cyber-charter schools in California are a notable exception. Under California bill SB 740, passed in 2001, cyber-charter schools must make individual courses available to public school students.

school, which is typically funded based on a traditional brick and mortar model. Costs of differently designed online schools and the quality of the learning experience associated with these different designs need to be understood. In the absence of such an understanding, it is not possible to determine which instructional designs are most cost-effective. Moreover, current funding policies for charter schools are too inflexible to adjust to cost differences associated with different models for delivering education. Such policies need to be revised.

Rural districts in states such as Pennsylvania have set up their own cyber-charter school, or have done so in partnership with a commercial provider. By offering courses outside the district, such programs can help finance local schools, as long as state-mandated reimbursement rates exceed district costs.

Regardless of the organizational form that a state or locally sponsored online program takes, data need to be collected and analyzed to help identify design elements that are key to student success and to guide improvement in this young form of education delivery. In addition, continuing investments will be needed to translate new technologies and a better understanding of the learning process into design strategies that can improve student outcomes.

Conclusion

High quality online education offers a way to reach students who were formerly unserved or underserved by public brick and mortar schools. A wide variety of programs have emerged to fill these needs, including state and district-based programs, consortia, charter schools, and university-based programs. State or local agencies may produce online services or buy or lease content and other support services from commercial providers, or from one another.

We have reviewed several approaches for the production, delivery, and financing of online education and offered an assessment of some of the strengths and challenges associated with each. Based on this review, we conclude that states must assume a leadership role to articulate goals, set policies, and create incentives that will ensure that all eligible students have equitable access to high-quality content, that implementation strategies are efficient and effective, that data are continuously collected and analyzed to promote improvement, and that their organizational structure for virtual school services is consistent with the goals of the program.

Tips for Getting Started

1. Development of an online program should begin with identification of unmet needs and clearly defined objectives. Programs developed or purchased should address needs and services that cannot be met in traditional educational settings and should be considered within the context of state and local educational goals for "adequacy" and equality of educational access.

2. Review findings of research and evaluation. There are considerable examples of "lessons learned" from pioneering districts and states. Several of the states that were mentioned in this paper have developed such experience. The bibliography that follows provides a list of articles and reports that could help policymakers to appreciate the costs and consequences associated with the multiple state- and school district models for online teaching and learning.

3. The organizational model chosen to furnish the online program should be suited to the defined objectives and sensitive to budget and enrollment considerations. Who pays can make a great difference in who benefits.

   · Build-your-own models can involve high up-front costs but will be less expensive in the long term, especially for bigger programs.

   · Pay-as-you-go models use commercially available products and services to reach students quickly, without large up-front investments.

   · Consortia spread investment costs across participants to create an affordable, robust menu of courses.

   · Cyber-charter schools are best suited to home-school populations because of their focus on full-time enrollments. Specific policies may be needed to ensure that students in traditional schools have access to individual courses.

   · State-run programs provide an opportunity to narrow the gap in access to high-quality education among districts and schools, but implementation strategies must acknowledge other inequities, such as lack of home resources, that could limit equitable access.

4. State-run programs need to consider funding strategies for developing and sustaining programs. Subsidies will encourage experimentation and use, helping to get the program started. Shifting to a tuition-based plan can cover costs and ensure efficient allocation of resources. District programs typically charge tuition for course overloads and for out-of-area students.

5. All programs are not alike; the least expensive could have the least impact. Courseware development costs range from as little as $1,500 to $50,000 and more per course. Class sizes also vary from some capped at 20 students per section to others that operate with much larger student-teacher ratios supplemented by local instructional support. In general, costs and prices should vary with these factors, as may the quality of the educational experience.

6. Cyber-charter schools vary in design and level of program-furnished instructional support. Laws governing reimbursement rates typically do not account for these differences and are written instead with a brick-and-mortar cost benchmark in mind. State legislators need to revisit these policies.

7. A system for ongoing data collection and analysis should be established at the outset for accountability purposes and to foster continuous improvement. In this way, online programs can ensure equity and continue to fine-tune their instructional models to increase depth of learning and chances of student success.

8. Programs that develop their own courseware should plan to invest regularly in courseware updates and in significant periodic revisions to incorporate new technologies and advances in course design that can improve student outcomes.

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