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Cost and Funding Models of A State-led Virtual Learning Program

Conducted Pursuant to
House Resolution 2010-592

February 2011

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Report Summary

House Resolution 592 of 2010 directed the LB&FC to study the costs associated with the Commonwealth establishing a Pennsylvania Virtual Learning Program, including a review of funding models used in other states. The resolution directs us to focus on programs that would provide supplemental courses that would otherwise be unavailable due to a school's funding or personnel restraints.

Virtual Learning Programs Currently Offered by Pennsylvania School Districts

Many Pennsylvania school districts[1] currently have arrangements with organizations, both nonprofit and for-profit, to provide supplemental virtual learning programs. These organizations vary widely in their approach to the courses they offer. Key differences include:

Asynchronous/synchronous. Asynchronous courses are "stored" courses that allow students to access and work on the course at any time or day during the year. Synchronous courses use real-time teachers and therefore require students to be at a computer during specific periods of time.

The programs we reviewed offer their courses in mostly an asynchronous format. Typically, these courses use teachers to monitor and assist students, either online or through office telephone hours or appointments. Waterfront Learning, a program sponsored by Allegheny Intermediate Unit 03, is an example of a program that offers both synchronous and asynchronous options.

Adapting courses to district preferences. Some organizations, such as the National Network of Digital Schools (NNDS), offer courses "as is" whereas others, such as Virtual Learning Network Partners (VLN), work directly with school districts to ensure that the virtual learning courses mirror the pace and content of what is being taught in the classroom.

In-School/At Home. Most of the programs we reviewed offer courses in the traditional school setting, although due to their asynchronous nature could be taken virtually anywhere, at any time. Blendedschools.net, where approximately 70 percent of the students access the program in a classroom setting, is a notable exception and offers classes that are designed to be taken in a classroom setting.

[1] Although not definitive, one estimate was at least 158 of Pennsylvania's 501 school districts are under contract with a nonprofit or for-profit vendor of online courses.

Supplemental/Core Course Offerings. Typically, the school district programs we reviewed offer core courses as well as common elective courses. Many programs also offer advanced placement, world languages, and credit recovery courses. All the programs we reviewed required the student to receive the approval of the school district before enrolling in the course.

Grade Level Offerings. While several providers, such as K12 Inc., offer online courses for all grade levels, almost all the school districts we contacted offered online courses to high school students only.

Use of District Teachers and Staff. Virtual learning programs may use teachers from the student's school district (e.g., Blendedschools.net) or they may use out-of-district teachers with Pennsylvania certification. Programs that use out-of-district teachers generally require a district employee (e.g., guidance counselor, principal, teacher, or teacher aide) be assigned to help monitor the student.

Credit Recovery and At-risk Students. Online learning can also be a valuable tool for students in credit recovery or otherwise at-risk of dropping out of high school. For the most part, the courses used for at-risk students appear similar (or identical) to the courses used for other students, although at-risk students may need greater support from school staff. The Philadelphia School District targets their online program to seniors who need just a few credits to graduate and 9th graders who need additional credits to be promoted to 10th grade. The Pittsburgh School District targets their online learning programs to "fifth-year" seniors and students who are more than one year behind in their grade level.

Cost and Pricing Structure. Given the variety of models and approaches, it is not surprising that we found considerable variation in the cost and pricing structure of the programs currently being used in the Commonwealth. On the low end was Blendedschool.net, which charges as little as $142,500 for 7,500 users, or $19 per user. Per course costs are even lower because users may take additional courses for no additional charge. Blendedschools.net, however, relies on the school district's teachers to teach the course, which is a significant additional cost to the district.

School districts that do not want to supply teachers can opt for a provider such as the National Network of Digital Schools, where a one semester (half year) course generally costs between $173 and $302, depending largely on whether the student chooses to order a hardcover textbook.

K12 Inc., one of the nation's largest providers of online curriculum, has several pricing structures. As an example, a full year (two semester), high school level course, including teacher support with a K12 teacher, costs $750. Advanced Placement courses are slightly higher, $790. K12 offers discounts to schools that make volume purchases.

Virtual Learning Programs and Funding Models in Other States

States also vary widely in their approach to providing state-led virtual school programs. Based on a 2008 analysis, 28 states—Pennsylvania is not among them—have established a state-led virtual school and an additional six states have some type of state-led online initiative.

In general (three-quarters or more), the state-led virtual schools:

- Maintain the local school district as the diploma-granting entity.
- Offer core courses as well as Advanced Placement and supplemental courses.
- Align their state-led virtual school's curriculum to the state's academic standards.
- Support only high-school level programs (i.e., not elementary or middle school grades).
- Require teachers to complete specialized training for on-line teaching.
- Require online teachers to meet the same certification requirements as classroom teachers.
- Require periodic evaluations of the state-led virtual school program.
- Require students seeking a diploma to participate in state assessments.
- Receive at least some state funding.

In addition, more than half of the 28 programs:

- Provide monetary and/or technical support to the state-led program for hardware and software.

We collected additional data on 16 states that were recommended to us or that we judged as possible models for a Pennsylvania state-led virtual school program.

In FY 2008-09, these 16 state programs:

- Enrolled between 366 (Maryland) and 127,609 (Florida) students. The 16-state average was 13,640 students. The average course enrollment was 17,096 (a student may take more than one course).
- Offered between 42 (Arkansas) and 302 (Michigan) unique course offerings. The 16-state average was 111 unique course offerings.
- Ranged in cost between $85 per course enrollment (Michigan) and $1,200 per course enrollment (Missouri). Michigan's program was established in

2000 and received $18 million in state funds during its first three years of operation, but for the past three years has received only $1.6 million annually. Missouri's program was established in 2007, but due to state budget cuts has fully transitioned to a tuition-based model. The 16-state average was $494 per course enrollment.

- Had total program costs that ranged from $325,000 (Connecticut, with 2,500 course enrollments) to $87.3 million (Florida, with 145,935 course enrollments). The 16-state average program cost was $9.6 million.
- Most states (12 of 16) offer supplemental-only programs (i.e., students must take most or all of their core courses at a brick-and-mortar public school). Georgia allows students to take all their classes through their virtual school, but this option is used primarily by medically homebound students.
- Most states (12 of 16) operate their program through their state Department of Education or State Board of Education. Programs in the other four states are operated by nonprofit organizations other than the Department or state Board of Education.
- All but one of the 16 states use a combination of in-house and purchased courses,[2] but the percentage of in-house versus purchased courses varies greatly from state to state. Idaho, for example, reported developing 80-85 percent of its courses in-house, whereas West Virginia reported purchasing 98 percent of its courses from outside vendors. Several states reported that they purchased between one-third and two-thirds of their course offerings from outside vendors.
- Relatively few of the 16 states (e.g., Florida and Missouri) offer courses for all grade levels (K-12). About half the 16 states have developed courses for both middle school and high school level students. Several other states allow middle school (and even elementary school) students to take courses, even though they were developed for high school.
- States also vary widely on the percent of funding they receive from state general funds. About half the states (e.g., Alabama, Arkansas, Florida, Idaho, Louisiana, Michigan, North and South Carolina, and West Virginia) reported their programs receive most or all of their funding directly from a state appropriation. The federal government also provides funding, but the amounts are relatively minor and are often structured as seed money. State programs that receive the majority of funding through tuition payments (typically from school districts, although in some cases students are also charged) include Connecticut, Georgia, Illinois, Missouri, and Maryland.

[2] The exception was Missouri, which reported that it purchases all its courses from outside vendors.

Potential Governance Models and Cost Projections for a Pennsylvania State-led Virtual Learning Program

House Resolution 592 directs us to assess the costs associated with the various virtual learning delivery models identified during the study. In that virtually every school district and state has developed, to some degree, its own unique program, it is difficult to empirically compare and contrast the most common "models." That said, listed below are four potential governance models that, broadly speaking, could be used to develop a Pennsylvania state-led virtual learning program. The ultimate cost of a program developed under any of these governance models depends, first and foremost, on the number of course enrollments anticipated.

A Department of Education-led Program. Many states operate their virtual school programs directly through their Department of Education or State Board of Education. The North Carolina Virtual Public School (NCVPS), for example, is its own agency under the State Board of Education. It has a staff of 21 and provides both middle school and high school level online courses, most of which are developed with in-house resources. NCVPS is a supplemental program (students take their core courses in a brick-and-mortar public school) intended to allow students to take courses they may not otherwise be able to take because of the school's financial situation (e.g., number of students and/or money for qualified teachers). The program also provides credit recovery courses.

NCVPS is one of the largest virtual school programs in the nation, serving an estimated 45,000 students in FY 2010-11 at a cost of $20 million, or about $445 per student served. NCVPS receives virtually all its funding through a state appropriation using a formula based on its projected enrollment; there is no direct cost to the student or to the student's school district.

Because North Carolina and Pennsylvania have roughly similar public school enrollments (1.5 million and 1.8 million, respectively), it is reasonable to assume that a Pennsylvania program similar to NCVPS would have similar costs.

A Public or Private Entity Not Under the Direct Control of the State Department of Education. Connecticut's Virtual Learning Center (CTVLC) is operated through a state-created consortium and offers approximately 25 online courses for credit recovery, advanced placement, and world languages. In 2007, the state legislature appropriated $850,000 to launch CTVLC. Due to state budget cutbacks, no state funds were appropriated in 2008. As a consequence, CTVLC now charges school districts $295 per semester course ($320 per semester for private school and home-schooled students).

Michigan's Virtual School (MVS) is operated by the Michigan Virtual University, a private nonprofit corporation. MVS offers over 150 courses for both middle and high school students. Courses are generally taken in school during the regular

school day and are intended to supplement, not replace, what is currently being offered at the school. Michigan requires that every student taking a virtual course have an on-site mentor teacher who acts as the student's teacher of record. Course fees vary depending on the type of course and number of seats purchased. Most high school courses are $250 per seat per semester (for 10-99 seats); AP courses are somewhat higher ($325 per seat for 10+ seats). Courses may have additional charges for books or other materials. Schools generally pay these fees, although some costs may be passed along to parents. During its first three years of operations, MVS received $18 million in state appropriations, but for the past three years (FY 2007-08 through FY 2009-10) it has received only $1.6 million annually.

Per semester costs are similar for Connecticut ($295/seat with no state funding) and Michigan (approximately $250/seat with $1.6 million in state funding). Assuming a Pennsylvania virtual learning program would provide 50,000 course enrollments annually at a cost of $295 per enrollment, a similar program for Pennsylvania could be expected to cost in the range of $15 million annually (excluding start-up costs).

A Department of Education/Intermediate Unit Partnership. Examples of statewide programs being led by regional education agencies can be found in Texas and Illinois. The Texas Education Agency (TEA) is required by law to contract with a regional education service center to operate the Texas Virtual School Network (TxVSN). The TEA selected Education Service Center (ESC) Region 10 as the TxVSN operator. (ESCs have a similar function to our Intermediate Units.) ESC Region 10 coordinates the centralized TxVSN registration and student enrollment system, acts as a clearinghouse to approve courses and ensure the eligibility of TxVSN course providers, and coordinates data needs for state reporting requirements.

TxVSN began offering courses for students in grades 9-12 in January 2009; in its 2009-10 school year, there were a total of 4,459 semester course enrollments. During the 2008-09 school year, districts paid for the online courses provided by TxVSN. Beginning in FY 2009-10, TxVSN receives a state allotment to fund courses. For each of the 2009-10 and 2010-11 school years, $10.15 million was appropriated for TxVSN. If a student successfully completes an online course provided through the TxVSN, the TEA pays $400 per semester course to the district which provides the course (the "provider district") and $80 per student to the receiver district, subject to the appropriation limit.

Illinois has a somewhat similar structure. The Peoria Regional Office of Education, in partnership with a consortium of 10 other Regional Offices of Education and others, was awarded a contract by the Illinois State Board of Education to manage and operate the Illinois Virtual School (IVS). IVS offers online courses to all Illinois public, private, and home-school students in grades 5-12. Funding for IVS is through a state appropriation ($1.16 million in 2009-10), and from course

enrollment fees of $195-$250 per enrollment, typically paid for by the school district.

TxVSN costs are limited to the state appropriation of $10.15 million. The Illinois contract with the Peoria Regional Office of Education for FY 2010-11 was $3.4 million for the administration and management of the IVS, including an expansion of course options. IVS reported 2,445 course enrollments during 2009-10. At an average cost of $225 per enrollment, this totals an additional $550,000.

A Newly Created State Agency. In 2000, the Florida Legislature established the Florida Virtual School (FLVS) as an independent educational entity with a gubernatorial appointed board. Courses are offered to Florida public school students at no charge to them or their district. Students may be full-time (through the FLVS FT program) or schools may use the e-learning Center (ELC). The ELC was designed to allow districts to offer courses to students without the expense of hiring a teacher for a small number of students. In FY 2009-10, FLVS reported serving over 97,000 students in 213,926 half-credit enrollments, with a staff of over 1,200 at a cost of $87.3 million. FLVS also provides services to students, schools, and school districts throughout the U.S. and in other counties.

Projections Based on Professional Judgment. Cost projections can be made either empirically (using actual data, such as the state examples above) or through professional judgment, such as was done in 2006 in a report by Augenblick, Palaich, and Associates (APA). APA noted that costs for online virtual school programs fall into two categories: start-up costs and ongoing costs. They assembled a panel of education professionals who estimated that a new state-led supplemental program designed to provide 3,000 units of instruction (a full-year course) in year one will require about $1.6 million to adequately fund start-up activities before providing instruction.

The panel noted that post-startup operating costs are heavily dependent on variables such as where students take their courses (costs are higher if taken on-site at a physical school because staff members are needed to support students) and the characteristics of the students being served (e.g., special needs students have higher costs). The estimated base cost for serving students with no special needs varied from about $7,500 per FTE[3] student for a state-led supplemental online program that has high levels of quality assurance and instruction and is growing, down to as low as $3,650 per FTE[4] student for a program that is large, not growing, and not investing significant professional development for teachers and similar quality measures.

These estimated costs appear to be roughly in line with the actual costs experienced by school districts within Pennsylvania and in other states as outlined above.

[3] An FTE (full-time equivalent) student course load equates to 12 half-semester courses, or $625 per course.
[4] An FTE (full-time equivalent) student course load equates to 12 half-semester courses, or $304 per course

I. Introduction

House Resolution 2010-592 (see Appendix A) directs the Legislative Budget and Finance Committee (LB&FC) to report on the cost to establish a state-led virtual learning program which would supplement students' public school experience by expanding course offerings. The resolution stems in part from the work performed by the Pennsylvania Virtual High School Study Commission, which released its final report in December 2009. The study is to also include costs associated with various virtual learning delivery models and projected costs for various courses directed toward advanced placement, credit recovery, and dropout prevention.

Study Objectives

The basic objectives of this study are:

- Identify the various learning delivery models and funding mechanisms used in the establishment of state-led, supplemental virtual learning programs in other states or entities.
- Identify the costs associated with virtual learning delivery models including intermediate unit consortium models; course development entity contracts and projected costs for various courses including core subject courses; advanced placement and enrichment courses; and courses tailored for at-risk students in credit recovery, dropout prevention, and dropout recovery programs.

Scope and Methodology

To prepare this report we familiarized ourselves with the work of the Pennsylvania Virtual High School Study Commission and performed a review and independent analysis of a large body of research that exists on the general topic of virtual learning and, specifically, state-led virtual learning programs. To prepare the analysis of what is currently occurring in this arena in Pennsylvania, we met with representatives of the major providers of online services to Pennsylvania's 501 school districts and officials at several cyber charter schools, individual school districts, and intermediate units. We sought detailed input from the Pennsylvania Department of Education through the Deputy Secretary of Basic and Secondary Education under whose responsibility online learning resides. We also met or spoke with representatives of various interest groups, including the Pennsylvania School Boards Association and the PA Association of Rural and Small Schools. We also contacted the Pennsylvania State Education Association to seek their input.

Acknowledgements

We wish to thank the staff of the Pennsylvania Virtual High School Study Commission, the Deputy Secretary of the Office of Basic and Secondary Education at the Pennsylvania Department of Education and her staff and the many other individuals we met with who provided us with the information necessary to perform this study. We also wish to thank the legislative staff members who were helpful in providing guidance and directing us to individuals who could provide insight about virtual leaning. A special note of thanks goes out to the many individuals, stakeholders groups, and organizations who spoke with us about the ever-evolving nature of virtual learning and helped us to identify issues.

Important Note

This report was developed by Legislative Budget and Finance Committee staff. The release of this report should not be construed as an indication that the Committee or its individual members necessarily concur with the report's findings and recommendations.

Any questions or comments regarding the contents of this report should be directed to Philip R. Durgin, Executive Director, Legislative Budget and Finance Committee, P.O. Box 8737, Harrisburg, Pennsylvania 17105-8737.

II. Overview and Comparative Cost Information of Selected State-led Virtual Learning Programs

Online learning is generally defined as education which is teacher-led, that takes place over the Internet, and where the student and teacher are separated geographically. There are several variations to that basic model, such as blending face-to-face instruction with online instruction and using Internet-based resources to supplement classroom materials.

Online learning programs can also be distinguished between those that are primarily full-time, in which all coursework required for required credits is taken online, and those programs which are supplemental, i.e., where the student is otherwise enrolled in a school separate from the online program and takes only some of his or her coursework virtually. For the purposes of this report, and as directed by House Resolution 592, we focus primarily on supplemental programs.

Online learning is becoming increasingly popular, and according to a report published by the Sloan Consortium in January of 2009, 75 percent of those school district administrators responding to their survey had one or more students enrolled in a fully online or blended course as of school year 2007-08.

Types of Online Learning Programs

There are at least three different types of online learning that involve, in varying degrees, a state governmental entity: state-led virtual schools, state-led online initiatives, and cyber-schools. According to the North American Council for Online Learning (NACOL), several common elements of state-led virtual schools help to distinguish them from other online learning programs. These include: creation by state legislative action and/or administered by the respective state education department; funding provided by a state appropriation for the purpose of providing equitable opportunities across a state; the use of a central platform for the provision of the required IT components (both hardware and software); the centralized hiring, training, and professional development of teachers and administrative staff utilized in the state virtual school; centralized student and course registry and student information record keeping; and the provision of counseling services offered, separate and in addition to, traditional student academic counseling services.

As shown in Exhibit 1, as of 2009, 27 states had established state-led virtual schools. An additional six states offer state-led online learning initiatives that provide tools and resources to school districts across their state, while not providing all the centralized administrative services typically provided by a state-led virtual school. Together, the existing state virtual schools have provided approximately

320,000 course enrollments (one student taking one semester-long course) for credit courses in school year 2008-09.

A third group of states, which includes Pennsylvania, allow for full-time online program opportunities, most often called cyber schools. These programs are often created by public school related entities or otherwise sanctioned by a state department of education and are called cyber charter schools. Cyber charter schools are an alternative to a brick-and-mortar public school program, and the diplomas granted are recognized by the state authorizing entity as the equivalent to a diploma granted by a brick-and-mortar school.

Exhibit 1

States With Virtual Schools and Full-Time Statewide Online Schools in 2009

States With a State Virtual School	States With a State-led Online Initiative	States With a Virtual School or Initiative in Development	States With Full-time Statewide Online Schools
Alabama	California	Maine	Alaska
Arkansas	Massachusetts	Montana	Arizona
Colorado	Nebraska		Arkansas
Connecticut	Oregon		California
Florida	Washington		Colorado
Georgia	Wyoming		District of Columbia
Hawaii			Florida
Idaho			Georgia
Illinois			Hawaii
Iowa			Idaho
Kentucky			Indiana
Louisiana			Kansas
Maryland			Minnesota
Michigan			Missouri
Mississippi			Nevada
Missouri			New Hampshire
New Mexico			Ohio
North Carolina			Oklahoma
North Dakota			Oregon
South Carolina			Pennsylvania
South Dakota			South Carolina
Tennessee			Utah
Texas			Washington
Utah			Wisconsin
Virginia			Wyoming
West Virginia			
Wisconsin			

Source: Developed from information taken from the report, *Keeping Pace With K-12 Online Learning*, November 2009. Data reported is from 2009. States in bold in Column 1 were also identified in the SREB Report on Southern States.

Common Features of State-led Virtual Learning Programs

In August 2008, the Education Commission of the States published a comprehensive analysis of state efforts to establish virtual high schools. The Commission found:

- Twenty-eight states have established statewide virtual high schools.
- Twenty-five states maintain the local school district as the diploma granting entity. Only four grant diplomas directly.
- Twenty-four state programs offer core curriculum, seven offer supplemental curriculums, and 24 offer advanced placement classes. Supplemental curriculum is defined as enrichment curriculum (no full-time students).
- Sixteen states provide monetary and/or technical support to the virtual high schools for hardware and software.
- Five states have set a cap, ranging from three to six credits per year, on the number of courses a student may take.
- Nineteen states have specific requirements or limitations for programs.
- Nine states use off-the-shelf curriculum. Eight states develop curriculum internally. Six states use half established curriculum and half internally developed curriculum.
- Twenty-seven states of the 28 states with statewide virtual high schools align the virtual high school curriculum to the state's academic standards.
- All but one of the programs receive at least some state funds.
- Twenty-two states require teachers to have completed specific training for teaching online.
- Twenty-five states require online teachers to meet the same requirements as classroom teachers.
- Twenty-three states require evaluation of programs.
- Twenty-five states require students seeking a diploma to participate in state assessments.

Cost of State-led Virtual Learning Programs in Other States

We collected additional financial and student and course enrollment information on 16 of the 28 state-led virtual school programs: Alabama, Arkansas, Connecticut, Florida, Georgia, Idaho, Illinois, Kentucky, Louisiana, Maryland, Michigan, Missouri, North Carolina, South Carolina, Virginia, and West Virginia. We had intended to include Delaware in our analysis but did not because budget deficits caused its program to be eliminated for the 2009-10 school year. Unless otherwise noted, the funding information presented below is for the 2008-09 school year.

The data for the analysis came from a variety of sources, most notably the publications, "Keeping Pace with K-12 Online Learning: An Annual Review of State-Level Policy and Practice" and the Southern Regional Education Board (SREB) Educational Technology Cooperative 2008 and 2009 reports on SREB State Virtual Schools. For states whose information was not included in sufficient detail in any of these compiled documents (Connecticut, Idaho, Illinois, Michigan, Missouri, and Texas), we acquired the necessary data through phone surveys with program specialists in those states' virtual school programs. Additional information, as needed, was gathered through website reviews.

Total Funding. For the 16 states studied, the total funding utilized for all programs was $152,939,230. The state with the highest level of funding was Florida at $87,283,012; the lowest was Maryland, at $170,000. As shown in Exhibit 2, the average annual funding across all programs was $9,558,702, while the median funding was $3,135,609. The graph in Exhibit 3 depicts total 2008-09 funding for the 16 states we studied with state-led virtual schools, showing that funding varies widely from state to state.

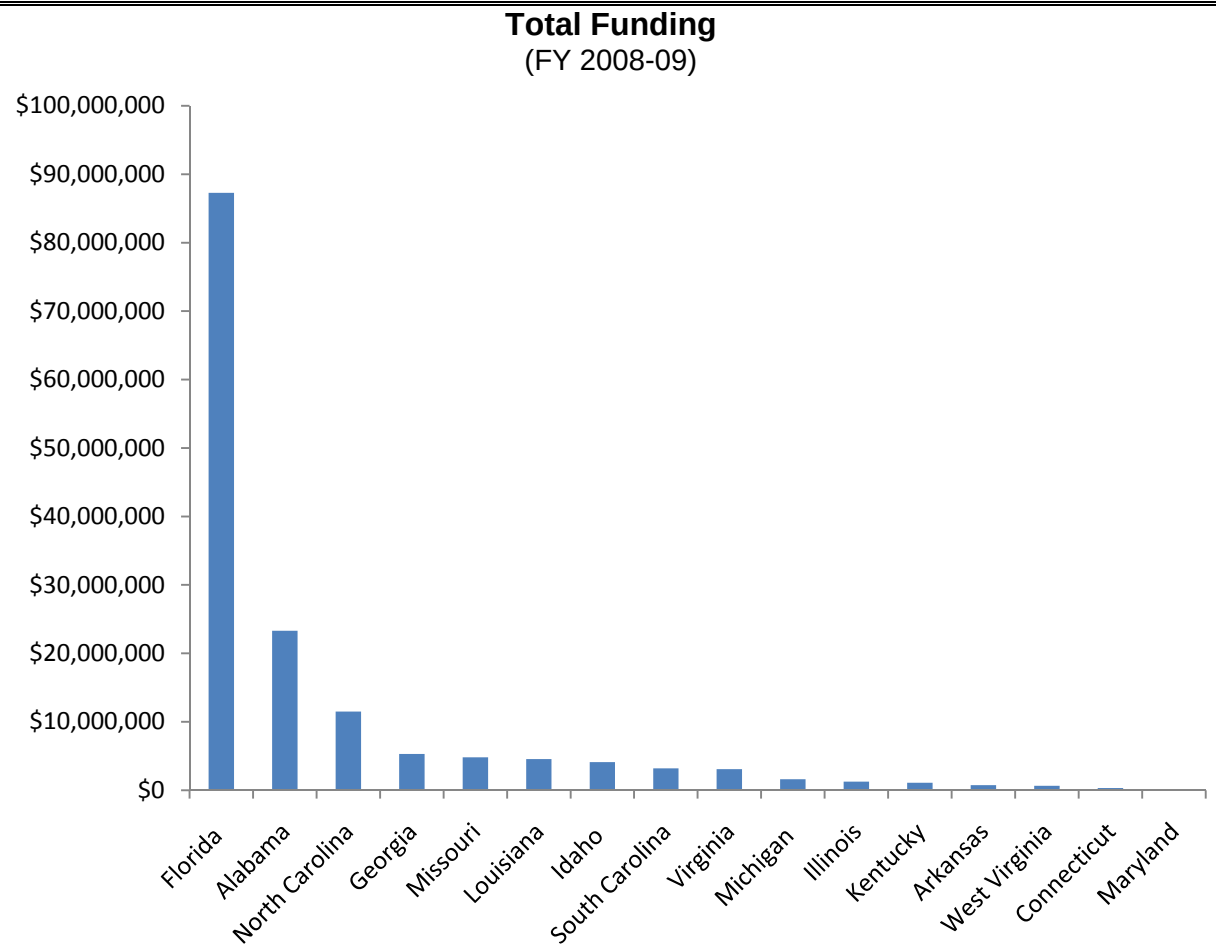
Exhibit 2

Total Funding

	Amount	State
Total Funding	$152,939,230	All 16
Highest Funded Program	87,283,012	Florida
Lowest Funding Program	170,000	Maryland
Average Funding	9,558,702	
Median Funding	3,135,609	

Source: Developed by LB&FC staff from SREB reports and information collected directly from the states.

Exhibit 3



Source: Developed by LB&FC staff from SREB reports and information collected directly from the states.

Student and Course Enrollment. Student enrollments also fluctuate greatly from state to state, with a high of 127,609 in Florida's program to a low of 366 in Maryland. The average enrollment was 13,640 students for school year 2008-09 for the 16 states, while the median enrollment was 3,880 students per program.

As one student could potentially take several courses, we also reviewed course enrollments. Total course enrollment for all 16 states was 273,535, with an average course enrollment of 17,096 and a median of 7,505.

Exhibits 4 and 5 show the results of a state's funding divided by its corresponding student enrollment and course enrollment total. Specific data was not available for three states, but overall the average funding per student enrollment is between $631 and $699, with a high of $2,182 per student in Missouri and a low of $132 per student in Michigan. The funding per course enrollment (a course defined as a one-semester, or half year, course) ranges from a high of $1,200 per

course enrollment to a low of $85 (see Exhibit 6), with an average and median cost per course enrollment of $494 and $429 respectively.

Exhibit 4

Funding Per Student Enrollment

	Amount	State
Highest Funding Per Student Enrollment.....	$2,182	Missouri [a]
Lowest Funding Per Student Enrollment.....	132	Michigan
Average Funding Per Student Enrollment.....	631 to 699	(Some states provided ranges)
Median Funding Per Student Enrollment	684	

[a] Missouri lost all funding in November, 2009

Source: Developed by LB&FC staff from SREB reports and information collected directly from the states.

Exhibit 5

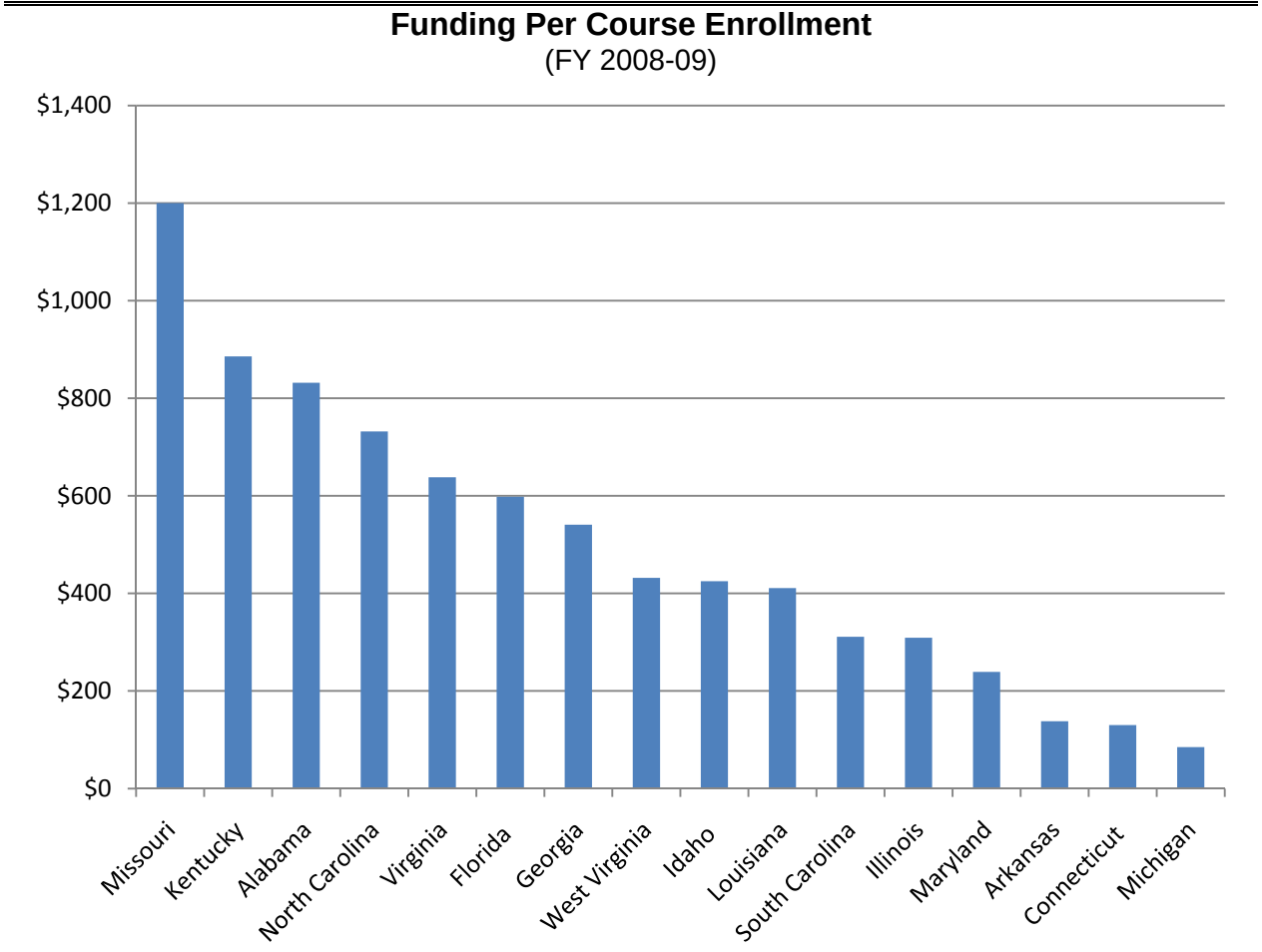
Funding Per Course Enrollment

	Amount	State
Highest Funding Per Course Enrollment	$1,200	Missouri [a]
Lowest Funding Per Course Enrollment:	85	Michigan
Average Funding Per Course Enrollment	494	
Median Funding Per Course Enrollment:.....	429	

[a] Missouri lost its state funding in 2009-10 and now operates as a tuition-based program.

Source: Developed by LB&FC staff from SREB reports and information collected directly from the states.

Exhibit 6



Source: Developed by LB&FC staff from SREB reports and information collected directly from the states.

Finally, we looked at the number of unique courses offered. Michigan had the highest number of unique courses offered (302) and Arkansas had the fewest number of unique courses offered. The average number of unique courses offered was 111, with a median of 115. When individual state funding is divided by number of unique courses offered, the average funding per unique course across all states studied is $84,772, with the median funding per unique course being $30,113.

Factors That Influence Costs for State-led Virtual Schools

Without specific information on the type of program Pennsylvania might implement, we could not provide detailed cost information on a potential Pennsylvania program. Examples of the type of information that would be needed include:

- How many students and what types of students will be taking the virtual courses?

- How many unique courses will be offered? What types of courses will be offered? Will the number of courses taken virtually be supplemental to the student's typical face to face coursework? Are all courses taken at a brick-and-mortar school?
- Where does course content come from? Will courses be developed in-house or purchased from a third party(ies)? How are courses aligned with state standards, how often are courses updated and by whom?
- Who provides for additional instructional materials and supplies, if needed?
- Who provides teachers and administrative staff and what is the desired teacher/student ratio? Are there full-time, part-time, adjunct teachers and substitute teachers? How much training and ongoing professional development do teachers and staff receive? Are there salary differentials for virtual teachers?
- Who provides the learning platform (software and connectivity) and training and ongoing support? Again, is it developed in-house or purchased and maintained by a third party vendor(s)?
- Who provides the technology (hardware), training and ongoing support? Do students take the hardware home from school? Hardware for teachers and staff may need to be acquired.
- Does all the coursework occur in the brick-and-mortar school? Where is space provided for the teachers and staff of the state virtual school?
- Are there additional administrative services offered and who provides them-guidance counseling, centralized course registration and recording keeping, and digital library resources, to name a few?
- How much additional separate assessment of both teachers and students is done?

Information on how other states have addressed these issues is presented in Chapter III of this report.

Augenblick, Palaich, and Associates. Rather than using empirical data to estimate the potential cost of a state-led virtual school, in 2006, Augenblick, Palaich, and Associates used a "Professional Judgment" approach to develop such an estimate.[1] In this approach, two panels—one of representatives of state-led programs and the other of representatives of full-time programs—were used to estimate the resources necessary to establish and operate a state-led virtual school meeting state standards.

[1] *Costs and Funding of Virtual Schools*, Augenblick, Palaich, & Associates, October 2, 2006.

The Augenblick, Palaich, and Associates report noted that costs for online virtual school programs fall into two categories: start-up costs and ongoing costs. They assembled a panel of education professionals who estimated that a new state-led supplemental program designed to provide 500 full-time equivalent students (or 3,000 full-year courses) in year one will require about $1.6 million to adequately fund start-up activities before providing instruction. The panelists estimated that nearly 80 percent of start-up costs would be devoted to management and course development.

The panel noted that post-startup operating costs are heavily dependent on variables such as where students take their courses (costs are higher if taken on-site at a physical school because staff members are needed to support students) and the characteristics of the students being served (e.g., special needs students). The estimated base cost for serving students with no special needs varied from about $7,500 per FTE[2] student for a state-led supplemental online program that has high levels of quality assurance and instruction and is growing, down to as low as $3,650 per FTE[3] for a program that is large, not growing, and not investing significant professional development for teachers and similar quality measures. Additional information on the Augenblick, Palaich, and Associates report can be found in Appendix B.

[2] An FTE (full-time equivalent) student course load equates to 12 half-semester courses, or $625 per course.
[3] An FTE (full-time equivalent) student course load equates to 12 half-semester courses, or $304 per course

III. Governance and Learning Delivery Models of Virtual Learning Programs in Other States

This chapter provides brief descriptive information about the 16 states for which we collected cost data (see Chapter II). We also provide information on the Texas Virtual School Network as an example of a state that operates its program through regional educational service centers, similar to Pennsylvania's Intermediate Units.

Areas of Study and Comparison

We reviewed various aspects of these state programs to obtain information regarding potential decisions on governance structures and learning delivery models for a state-led virtual learning program in Pennsylvania. Some of these aspects relate directly, and some only indirectly, to expenditures, but all could ultimately play important roles in the amount of funding needed.

The data for the analysis came from a variety of sources, most notably the publications, "Keeping Pace with K-12 Online Learning: An Annual Review of State-Level Policy and Practice" and the Southern Regional Education Board (SREB) Educational Technology Cooperative 2008 and 2009 reports on SREB State Virtual Schools. For states whose information was not included in sufficient detail in any of these compiled documents, (Connecticut, Idaho, Illinois, Michigan, Missouri, and Texas) we acquired the necessary data through phone surveys with program specialists in those states' virtual school programs. Additional information, as needed, was gathered through website reviews.

The following list depicts the aspects we examined;

- year program was established;
- grade levels served (both student and course levels);
- governance;
- learning delivery model utilized (e.g., face-to-face vs. online components, asynchronous vs. synchronous, cohort vs. self-paced, supplemental vs. full-time, formal communication requirements, external partnerships, and the type of centralized services offered by virtual school, such as course registration, student management information system, academic guidance services, and digital library resources);
- funding source/mechanism;
- cost of courses to students/parents/school districts (tuition);

- acquisition of courses (make vs. buy), course alignment with state standards and course updating/revising schedule;
- number of unique courses offered in each category type: core courses, electives, supplemental (enrichment), AP (honors), and at risk credit recovery, drop-out prevention and recovery, and remediation;
- number of teachers and staff employed and who employs them;
- student/teacher ratio; and
- the existence of accountability/evaluation measures.

Summary Information on the 16 States Reviewed

Alabama

The Alabama ACCESS Distance Learning Initiative was launched on November 1, 2004, with funding of $10.3 million starting October 1, 2005. It operates under the Alabama Department of Education (DOE), Technology Initiatives, and employs 10 DOE staff, with support from an ACCESS Advisory Board and ACCESS Task Force.

In Alabama's program, learning occurs mostly at a distance but with a blended component (i.e., requiring a face-to-face component on a regular basis). The Alabama State Board of Education partners with the Alabama Supercomputer Authority for technology needs. Courses are both web-based and interactive videoconferencing courses that are delivered via a blended model, so that courses have both synchronous and asynchronous components. Approximately 59 percent of available courses are purchased from outside sources and are aligned with state standards by adding additional content, if necessary. A course development team is under contract to ACCESS (Alabama Connecting Classrooms, Educators and Students Statewide).

The initiative has a centralized management information system (MIS) for student records linked to a statewide school districts system. Courses have set start and end dates, and students progress as a cohort. Dual enrollment is offered for college credit, and the program offers summer school courses. Core courses are updated every six years, after the adoption of revised content area courses of study. Other courses are revised as needed. The program is supplemental, meaning it has no full-time students who take all of their coursework through the virtual school. Counselors are provided at the local school level, although counselor training is provided by ACCESS. ACCESS seeks to maintain a teacher-pupil ratio of 1:29 or 750 student contacts per week.

Arkansas

The Arkansas Department of Education funds the Arkansas Virtual High School (AVHS) and publishes formal rules covering AVHS and distance learning. In Arkansas's program, all learning is fully online, at a distance. Courses are asynchronous, and there is no required face-to-face component. Communications are done through the Blackboard platform, a popular e-learning and course management software provider. The Arkansas program offers summer school courses, but no dual enrollment for college. Courses are developed in-house, not purchased from other providers, using state course content standards. Courses have set start and end dates, and students progress through courses as a cohort (i.e., at the same pace).

Students are permitted to take a maximum of half of their classes through distance learning. Private schools and home school students can take classes through their local public school. The program does not maintain a centralized student management information system for student records. Courses are revised on an ongoing basis through continuous monitoring.

AVHS is offered free to all public schools. Funding was steady at $740,000 annually from 2007 to 2009; in 2009-10 the funding decreased to $590,000, leading to a decrease in enrollments.

Connecticut

Connecticut's Virtual Learning Center (CVLC) is operated through The Connecticut Distance Learning Consortium (CTDLC), an organization within the Department of Higher Education, in partnership with the State Department of Education. The CTDLC is a membership organization whose Executive Council serves as an advisory board.

CVLC uses online courses that are both created in-house and purchased from outside vendors. Most of their purchased courses are from Florida Virtual School. Aventa Learning Courseware is an additional vendor used by CVLC. It offers approximately 25 online courses for credit recovery, advanced placement, and world languages. Recent legislation requires districts with a dropout rate of 8 percent or higher to establish an online credit recovery program as of July 1, 2010, and each school in the district must designate an online learning coordinator to administer the credit recovery program.

School districts are responsible for obtaining the necessary hardware and software for students to use if a student is working on coursework at school. CVLC has a virtual help desk that is staffed seven days a week. CVLC hires its own teachers to teach its online course content. CVLC offers both synchronous and

asynchronous courses. Coursework is self-paced, but with set start and end dates. While students are permitted to begin a course at any time, a "pacing schedule" must be worked out between the school administration, teacher, and student. Each semester course is based on a full 16-week curriculum. CVLC's current plan is to upgrade or revise courses every year.

CVLC is a supplemental program to a student's traditional brick-and-mortar school; students are not allowed to take all of their coursework through CVLC. CVLC does not provide guidance counseling through its online virtual school; rather it encourages students to seek out the guidance counselor in their school. CVLC does not have its own digital library, but it does provide a link to the state's digital library. CVLC operates both a Student Information System and a Learning Management System. CVLC's virtual coursework is reviewed by the state's department of education, although this is not a statutory requirement.

In 2007, the state legislature appropriated $850,000 to launch CTDLC. Due to state budget cutbacks, no state funds were appropriated in 2008. As a consequence, CTDLC now charges school districts $295 per semester course ($320 per semester for private school and home-schooled students).

Florida

Florida Virtual School (FLVS), founded in 1997, is one of the oldest such state-led schools in the nation. In 2000, the Florida Legislature established the FLVS as an independent educational entity with a gubernatorial-appointed board. FLVS's learning delivery model is best described as fully online, at a distance. FLVS does not offer dual enrollment for college credit, but it does offer summer school formats. Courses are self-paced, and include both synchronous and asynchronous. The virtual school follows state standards for implementing course updates, and updated courses are available for use immediately.

Students can take all their coursework through FLVS, and approximately 6,264 did so in 2008-09. Teacher/student communication must occur at least once a month. The virtual school maintains a separate MIS, which is then uploaded into the state system. Separate guidance services are provided. There are 124 unique courses, almost all of which were developed with in-house resources. The maximum number of students per section is 50. FLVS offers various opportunities for online professional development for teachers.

Courses are offered to Florida public school students at no charge to them or their district. Students may be full-time (through the FLVS FT program) or schools may use the e-learning Center (ELC). The ELC was designed to allow districts to offer courses to students without the expense of hiring a teacher for a small number of students. In FY 2009-10, FLVS reported serving over 97,000 students in 213,926

half-credit enrollments, with a staff of over 1,200 at a cost of $87.3 million. FLVS also provides services to students, schools, and districts throughout the U.S. and in other counties.

Georgia

Georgia Virtual School (GVS) was established by legislation in 2005 and is a program of the Georgia Department of Education. Georgia's program is best described as fully online, at a distance. Georgia offers 107 unique courses, 10 of which are purchased from outside sources. Courses have set start and end dates and students progress as a cohort. Courses are asynchronous, and teachers must return all emails within 24 hours. Georgia's program does not offer dual enrollment for college credit, but it does offer summer school courses. The virtual school is wholly run by the Georgia Department of Education, without other educational partnerships.

Courses are updated every three years in core subject areas and every five years in noncore areas. Teachers are held to the same certification standards as brick-and-mortar teachers. Online teachers are provided with dedicated training. Students can take all of their courses through the virtual school, although this option is mostly utilized for medically necessary homebound students. The GA Department of Education Credit Recovery Program offers public school students the opportunity to retake a course in which they were previously not successful. These courses are fully aligned with the Georgia Performance Standards and are self-paced. There is no instructor in this program.

GVS offers courses free of charge to all Georgia public school students who are taking the courses as a part of their state reported school day. A limited number of state-funded seats are available to private and home school students in the state. Tuition costs (if applicable) are $300 per half-year course. Local schools must also approve students' course selections before they are enrolled.

Idaho

The Idaho Digital Learning Academy (IDLA) was authorized by the legislature in March 2002. IDLA operates within the Department of Education as a supplemental, online education program for grades 7–12. IDLA has developed about 80-85 percent of its online content and only purchased vendor learning objects, such as science simulations, math manipulatives, and digital video. IDLA did purchase its coursework for Chinese from Aventa due to the expertise involved. Coursework is both synchronous and asynchronous. Staff training in online learning is provided in-house. School districts are responsible for providing equipment when utilizing IDLA coursework for supplemental learning. IDLA posts a recommended download page for school district tech coordinators to load on lab machines.

IDLA operates a virtual help desk from 8:00 a.m. to 6:00 p.m. The majority of IDLA's courses are asynchronous due to two time zones in the state and 113 school districts on different schedules. IDLA holds virtual math tutoring hours from 3:00 p.m. to 8:00 p.m. for online math students as a synchronous part of the program. IDLA's teachers are required to hold virtual office hours or host a live event that can be archived for later viewing.

Idaho Code requires that the Digital Learning Academy hire a curriculum and instruction coordinator to train faculty in online course design, development, and delivery. It also requires the Digital Learning Academy to hire fully certified faculty and teaching staff to design and deliver planned curriculum content.

Illinois

The Illinois Virtual School (IVS) offers online courses to all Illinois public, private, and home-school students in grades 5-12. The Illinois State Board of Education ran the program from 2001 to 2003, after which the Illinois Math and Science Academy assumed day-to-day operations. In 2008, the State Board of Education issued a Request for Seal Proposals for the administration and management of the IVS. The Peoria Regional Office of Education was the successful bidder. The Peoria ROE, in partnership with a consortium of 10 other ROEs and others, now manages and operates the Illinois Virtual School.

IVS is a supplemental program and has no full-time students. The majority of IVS's courses, about two-thirds, were created in-house. IVS has purchased advanced placement courses from Apex and business courses from Class.com. IVS partners with the local schools to provide the hardware and software to students. Students may take courses off-campus; however, if coursework is conducted on-campus it is required that students have a mentor in the room facilitating the coursework. IVS has chosen to run its virtual help desk itself rather than through a vendor.

IVS teachers are employees of IVS's Regional Offices of Education. The teachers are adjunct teachers who are already teaching in Illinois' public schools, retired teachers, or at-home teachers. IVS courses are asynchronous, although synchronous learning is also encouraged through the "Illuminate" learning management system. If certain thresholds are crossed, such as low grades or few communications with the teacher, teachers are required to communicate with the student.

Some courses have set start and end dates, others have flexible dates. Courses are generally done in cohorts (i.e., not self-paced) and generally last for 17 weeks. IVS uses a three-year review plan for revising and/or upgrading its courses and requires a fully developed curriculum map for all its courses.

Home-schooled students can use the virtual coursework; however, they must come to the school to take their tests. Formal communication requirements between teachers and parents are set in IVS guidelines before they begin teaching. IVS does not provide separate guidance counseling for its students. IVS uses a Student Information System for the management of its student records, and it is accessible by students, parents, and teachers.

Funding for IVS is through a state appropriation ($1.16 million in 2009-10), and from course enrollment fees of $195-$250 per enrollment, typically paid by the school district.

Kentucky

The Kentucky Virtual High School (KVHS) is a statewide educational service offered by the Kentucky Department of Education. Kentucky's learning delivery model is best described as fully online at a distance. Their program offers dual enrollment for college credit and a summer school program. In addition, they partner with numerous in-state and out-of-state vendors for additional courses, content development, and technology. Kentucky uses Blackboard Learning Management System for its technology communication. Courses are synchronous and are described as both self-paced and having set start and end dates, with students working as a cohort. Kentucky offers 86 unique courses, 59 percent of which are purchased from an outside source.

A separate, locally developed student information system is used for management of student records. Instruction and curriculum consultants compare course content to Kentucky standards. Courses are updated every year, if necessary, before the start of the fall semester. Students can take all of their coursework through the KVHS, and in 2008-09, 75 students did so. Some professional development opportunities are available for KVHS teachers. Teachers must follow fairly rigorous communication standards with their students. Separate guidance services and access to a digital library service are provided through the KVHS.

The fee for middle/high school courses is $165 per student per half-credit (one semester of content) and $330 per whole-credit course (two semesters of content). Local policy governs the payment of fees for students enrolling through the schools. Generally, the school district will pay this fee for the students who are enrolled full-time in the local public high school when the credit earned from the course will be counted towards high school graduation as part of the required 1,050 hours of instructional time. The district may ask the student to pay the fee if the course is above and beyond the required instructional time or if the student elects to take the KVHS course in lieu of a course already available at the high school to gain credits towards graduation.

Louisiana

The Louisiana Virtual School (LVS) is funded by the Louisiana Board of Elementary and Secondary Education. This program is best described as fully online, at a distance. Only one course (Algebra 1) has a blended component. Dual enrollment is offered with select universities, as is a summer school program. Louisiana uses an in-state partner (LS School for Math, Sciences and the Arts) for math, science and the arts classes. Louisiana offers 56 unique courses, 14 of which are purchased from an outside source.

Courses are both self-paced and done as a cohort, with set start and end dates and times. Courses are both synchronous and a synchronous and are updated every 2 years. No students are taking all their courses through this program. All teachers receive professional development in teaching online courses and ongoing training and have required standards for timely communication with students. No separate guidance services are provided, but students do have access to digital library resources. State guidelines on course content are used for quality control. Quality control is monitored by LVS's administrative staff. Louisiana uses a separate MIS for management of student records.

Beginning with the fall 2010 semester, the LVS will be collecting a Materials and Technology fee of $150 per student per course enrollment, to be paid by the student's district, school, or Local Educational Authority.

Maryland

In 2002, the state created the Maryland Virtual Learning Opportunities Program (MVLO) as an educational service managed by the Maryland State Department of Education. Maryland's virtual leaning model is best described as fully online, at a distance. However, some local school districts use the content from the online courses to supplement blended courses or as classroom-based resources. No dual enrollment for college credit is offered, but they do offer a summer school. Maryland offers 51 unique courses, only 5 percent of which are purchased from an outside vendor, using the vendor-provided teacher. There are four full-credit courses that MVLO developed and six courses that they have purchased or leased and the Maryland State Department of Education provides an instructor. Courses are asynchronous and are both self-paced and done as a cohort. No students take all their courses through the MVLO.

There are required interactions/communications between teachers, students, and administrative staff, and some professional development training is offered to teachers. Maryland does not offer separate guidance services or access to digital library resources. There is no separate management information system, and

Maryland does not contract with external partners. Courses are designed to align with state standards and are updated on an ongoing basis.

Course costs vary by type of course and provider. Local School Systems may offer scholarships or local funding to cover the cost of courses. Local school systems decide the attendance policy for students enrolled in MVLO courses as part of their regular daily class schedule. MVLO courses cost districts, on average, between $450 and $600. Costs are paid by the sponsoring high school or school system.

Michigan

Michigan's Virtual School (MVS) is operated by the Michigan Virtual University, a private nonprofit corporation. MVS uses both in-house and purchased courses, whichever option is most cost effective. MVS offers over 150 courses for both middle and high school students. Courses are generally taken in school during the regular school day and are intended to supplement, not replace, what is currently being offered at the school. Michigan requires that every student taking a virtual course have an on-site mentor teacher who acts as the student's teacher of record.

MVS began by operating its own virtual help desk for students, but then decided to outsource this to a vendor. MVS contracts with the teachers from the school districts to teach its courses. The instructors are Michigan-certified teachers that undergo training in order to teach online courses. MVS courses are taught both asynchronously and synchronously.

Course fees vary depending on the type of course and number of seats purchased. Most high school courses are $250 per seat per semester (for 10-99 seats); AP courses are somewhat higher ($325 per seat for 10+ seats). Courses may have additional charges for books or other materials. Schools generally pay these fees, although some costs may be passed along to parents. During its first three years of operations, MVS received $18 million in state appropriations, but for the past three years (FY 2007-08 through FY 2009-10) it has received only $1.6 million annually.

Missouri

The Missouri Virtual Instruction Program (MoVIP) is a program of the Missouri Department of Elementary and Secondary Education. The Department and the State Board of Education oversee administration and quality assurance activities, such as related content and delivery of courses. MoVIP offers 172 classes in grades K-12 using coursework purchased from outside vendors.

The Missouri Department of Elementary and Secondary Education assembled a committee of Missouri educators in early May to review over 400 online courses that were submitted for inclusion as part of the MoVIP program. Organized

into eight committees, the educators accessed the online courses to evaluate alignment with Missouri standards, quality of instructional design, type of assessments, and technology usage. Commercial vendors with selected courses include Aventa, Connections Academy, and Florida Virtual.

Students are allowed to attend on either a part-time or full-time basis. The state does not provide the hardware and software for its students. MoVIP contracts out for all their virtual help desk services. The vendors that MoVIP contracts with provide the teachers; however, Missouri state law requires that they be state certified, and it is preferred that they reside within the state. (Problems were encountered when teachers in other time zones taught classes.)

MoVIP is taught mostly in an asynchronous fashion, although a few synchronous classes are offered. MoVIP plans to upgrade or revise its courses every two to three years. They have chosen to contract out for any upgrades and revisions. MoVIP is a supplemental program for school districts, and no students may take all their coursework through MoVIP. Students may, however, take their online courses at home. MoVIP has hired two part-time guidance counselors for students using the virtual school, and a digital library database is provided. MoVIP owns and operates its own Student Information System (SIS) and requires that all contracted vendors use this SIS. To ensure the quality of its online course content and alignment with state academic standards, MoVIP contracts out for an evaluation process.

Due to state budget cuts, the nearly $7 million program has transitioned to a tuition-based model where school districts, private schools, or parents can pay for the classes. (The exception is approximately $100,000 set aside by the state for tuition for medically fragile students.) The costs of the classes vary by what the online vendor charges, with average costs being between $300 and $350 per semester course.

North Carolina

The North Carolina Virtual Public School (NCVPS) is its own agency under the State Board of Education. It has a staff of 21 and provides both middle school and high school level online courses.

This program is best described as fully online, at a distance. North Carolina does not offer dual enrollment with colleges because they have a companion program for that (Learn and Earn Online, which offers 600 dual credit courses), but they do offer a virtual summer school. North Carolina's program has 123 unique courses, with only 6 percent purchased from outside sources (two AP courses are purchased from FLVS and five German courses are purchased from Oklahoma State University). North Carolina also offers SAT prep courses.

Courses are both self-paced and done as a cohort, and include both synchronous and a synchronous formats. NCVPS is a supplemental program (students take their core courses in a brick-and-mortar public school) intended to allow students to take courses they may not otherwise be able to take because of the school's financial situation (e.g., number of students and/or money for qualified teachers). The program also provides credit recovery courses.

Courses are updated every three years. No separate guidance services are provided by the NCVPS, but students do have access to a digital library. North Carolina uses a centralized registration system, and courses are aligned to state academic standards. Teachers must communicate at least weekly with credit recovery students, and all emails must be returned with 24 hours. North Carolina provides some targeted professional development for teachers.

NCVPS serves an estimated 45,000 students (FY 2010-11) at a cost of $20 million, or about $445 per student served. NCVPS receives virtually all its funding through a state appropriation using a formula based on its projected enrollment; there is no direct cost to the student or to the student's school district.

South Carolina

In May 2006, the South Carolina Department of Education (SCDE) launched the South Carolina Virtual Schools Program (SCVSP) as a pilot program to explore the feasibility of virtual schooling for the state. The pilot was designed to give the SCDE[1] the opportunity to test its online learning course management system (Blackboard), registration system, and quality assurance measures. In 2007, legislation created the SCVSP at the SCDE and charged the State Board of Education with developing guidelines and promulgating regulations for the operation of the program.

The learning delivery model is best described as fully online, at a distance. South Carolina does not offer dual enrollment, but summer school is offered and it is very popular. South Carolina's virtual school partners with public and private schools, home school associations, and adult education learning centers. They also partner with SC ITV (a public television station) and the state library to access instructional materials online.

South Carolina offers 60 unique courses, 43 percent of which are purchased from an outside source. Courses are both self-paced and done as a cohort, and are both synchronous and asynchronous. Courses are aligned with state standards and are free-of-charge to any South Carolina public, private, or home-schooled student. SCVSP regulations limit the number of courses that a student may take in a year to

[1] They have since switched to a Moodle-based platform.

three, and 12 total during the student's high school career.[2] Separate guidance services are provided to students as well as access to digital library resources. South Carolina is purchasing Florida's Virtual School student information system to customize for its own use.

Accountability reports are included in each individual school district's report for the courses the students from that district take through the SCVSP. Regular (although not extensive) communication is required between teachers and students, and teachers are state employees.

SCVSP had a budget of $3.2 million in 2008-09. It employs 10 full-time instructors, 22 part-time instructors, and 8 administrative staff. SCVSP courses are free to students and the school district, although some schools may charge a facilities fee if the student has to take his/her virtual class at school during the summer.

Texas

Instead of purchasing online courses or developing them from scratch, the Texas Education Agency set out to find Texas school districts, regional education service centers, and higher education institutions that were already offering online courses. The idea was to enable students in districts that did not have access to online courses to enroll in existing courses hosted outside their own district. The resulting program, the Texas Virtual School Network (TxVSN), became available for students in grades 9-12 in January 2009 with a modest catalog of high school courses. In the 2009-10 school year, there were a total of 4,459 semester course enrollments.

The Texas Education Agency (TEA) is required by law to contract with a regional education service center (ESC) to operate the Texas Virtual School Network. The TEA selected ESC Region 10 as the TxVSN operator. ESC Region 10 coordinates the centralized TxVSN registration and student enrollment system, ensures the eligibility of TxVSN course providers, publishes an online catalog of approved courses, and coordinates data needed for state reporting requirements.

TxVSN operates primarily as a clearinghouse for approved online courses taught by certified teachers. It does this by creating and maintaining an electronic catalog and facilitating the "matching" of receiver districts (the district which receives the course) and provider districts (the district which provides the course). TxVSN is also responsible to ensure the flow of funds between and among provider and receiver districts.

[2] South Carolina provides for a waiver to allow additional online coursework, but to date no student has taken all courses through the virtual school.

TxVSN courses are reviewed to ensure they meet the Texas Essential Knowledge and Skills as well as the INACOL National Standards for Quality for Online Courses. Instructors must be Texas-certified in the course and grade level or have comparable credentials.

During the 2008-09 school year, districts paid for the online courses provided by TxVSN. Beginning in FY 2009-10, TxVSN received a state allotment to fund courses. For each of the 2009-10 and 2010-11 school years, $10.15 million was appropriated for TxVSN.

If a student successfully completes an online course provided through the TxVSN, the TEA pays $400 per semester course to the district which provides the course (provider district) and $80 per student to the receiver district, subject to the appropriation limit. TxVSN costs are limited to the state appropriation of $10.15 million.

Virginia

Virtual Virginia is a program of the Virginia Department of Education. Virginia's learning delivery model is best described as fully online, at a distance. Virginia does not offer a dual enrollment program, but does have a summer school. The primary mission of the program is to serve rural and underserved students with courses (e.g., AP and world languages) that were unavailable because of the lack of highly qualified instructors or because there were too few students to offer the course. Partnerships exist with two local educational agencies and a public television agency to operate the infrastructure of the program, which uses "Maestro" and a third party IT provider. Virtual Virginia offers 46 unique courses, 23 of which are AP courses and 16 are world languages. Sixty percent of its coursework is developed in-house. Purchased courses are mostly from the Florida Virtual School.

Courses have set start and end dates, move as a cohort, and are both synchronous and asynchronous. Courses are updated every three years. Professional development training is provided to all online teachers. Communication requirements are only once per week, with monthly phone calls (more if the student has a grade below a 70). Virginia provides online access for digital library resources and uses a separate MIS for student records. Courses are aligned with state standards. No students take all of their courses through the program.

There is no charge for Virginia public school students who participate in the Early College Scholars (ECS) program; their tuition is paid with state funds. There is a tuition charge per course for non-ECS Virginia public school students enrolled in AP courses of $375 times the Local Composite Index, but no tuition is charged for world language, core, and elective courses for Virginia public school students. Tuition for Virginia private and home school students is $500 per one

credit course and $300 per 0.5 credit course, for all courses. Textbooks and other materials are the responsibility of the private school or home-school parent. Virtual Virginia received approximately $3 million in state funds for 2009-10.

West Virginia

The West Virginia Virtual School (WVVS) was created by the West Virginia Legislature in 2000. The West Virginia Department of Education approves the courses to be offered from distance learning companies, organizations, K-12, and higher education institutions. This learning delivery model is mostly at a distance, but with a blended component. They partner with FLVS and the Southern Regional Education Board and are working on a relationship with a public broadcasting network. West Virginia does not offer dual enrollment, but does offer a parent-paid summer school.

West Virginia's state-taught virtual Spanish program incorporates digital content with weekly phone teaching and classroom visits twice a year. West Virginia offers 161 unique courses, 98 percent of which are purchased from an outside source. Courses are both self-paced and done as a cohort, and both asynchronous and synchronous. All courses are reviewed annually for updates. Teachers must grade assignments and respond to students/parents within 24 hours. Guidance services are provided by the local school districts; the WVVS provides access to digital library resources. The WVVS has a separate information system for students' records, and each course is evaluated by subject matter experts and aligned with state standards. No students take all of their courses through the state virtual school.

Tuition is paid by the West Virginia Virtual School on a first-come, first-served, basis. Pending the availability of funding, full tuition costs for first ten students in an individual course per year at a school are paid through WVVS state funds. Tuition for each student above ten in the same course, from the same school, requires a $200 per student cost commitment from the local district. State funds are used to pay the remaining per student course cost (ranging from $400 to $750). After WVVS funds have been expended, tuitions must be paid by the local district or parent, as per local policy. Course pricing varies by provider, with individual courses ranging from $150 to $850 per credit.

IV. Pennsylvania Department of Education Perspective and Supplemental Virtual Learning Programs in Pennsylvania School Districts

To assist us in determining the potential costs and structure of a State-led Virtual School (SLVS) in the Commonwealth, we thought it relevant to draw not only from other states with similar programs, but also from what is currently available through Pennsylvania school districts. Although comprehensive data is not available on all the online education activity currently taking place in Pennsylvania, as described below, we discovered that many programs are already at the school district level. It is clear that individual school districts have not waited for the Commonwealth to create an SLVS and are actively promoting online education through a variety of methods.

Pennsylvania Department of Education Perspective on an SLVS

Under the Rendell administration, the Pennsylvania Department of Education (PDE) supported the creation of a State-led Virtual School (SLVS) in Pennsylvania. The Deputy Secretary of the Office of Elementary and Secondary Education indicated that the department sees its role in the development of an SLVS as threefold:

- To build and maintain a common Learning Management System (LMS) platform so that students can easily access expanded curricula offerings that may not be available in their schools and so that student progress and data can be tracked and maintained centrally.[1]
- To provide necessary state staffing, including teachers and support staff, to administer any program adopted.
- To develop or contract for the development and maintenance of courses that would be offered through an SLVS.

A statewide LMS platform is an essential component of a State-led Virtual Learning Program. An LMS refers to software applications for the administration, documentation, tracking, and reporting of training programs, classroom and online events, and e-learning programs. An LMS provides the online learning platform on which courses are housed and incorporates software applications to distribute courses over the Internet, including features for online collaboration. Educational institutions use the application to enhance and support classroom teaching and to

[1] Expanded curriculum might include Advanced Placement courses, higher level mathematics, foreign languages, and options for at-risk or homebound students.

offer courses to a larger number of students. Student data can be maintained and progress of individual students can also be tracked centrally.

The Pennsylvania Department of Education has not yet attempted to develop the cost to implement and maintain a statewide LMS platform. However, the Deputy Director of the Office of Elementary and Secondary Education pointed to the cost paid by the Capitol Area Online Learning Association (CAOLA), which is administered by the Capitol Area Intermediate Unit (IU), as an example of what the state might be expected to pay. In that example, the IU has a contract with a company for $95,000 a year, which provides unlimited use of the company's learning management system and curriculum.[2]

Nationally, the trend in LMS pricing is pointing to a decrease in cost for installed platforms and an increase in hosted platforms.[3] Exhibit 7 presents information on the average cost for installed and hosted Learning Management Systems in 2008 and 2009 for small (500 registered users), medium (10,000 registered users), large (25,000 registered users), and very large (100,000 registered users) customers. LMSs represent an $860 million market, made up of more than 60 different providers offering services to private businesses and governmental and educational entities.[4] The top 10 LMSs in use by 668 educational organizations (higher education and K-12 institutions) in 2008 and the percent of users are shown in Exhibit 8.

Although the potential number of students and school districts that might be served through a Pennsylvania SLVS is not known at this time, it can be assumed that there will be interest for such a program, especially for those school districts that have not already contracted with a vendor for online courses. However, anticipated administrative costs, including teacher and support staffing, and space costs that the department would have to fund have not yet been determined. The department noted that it does not currently have sufficient staff to administer such a program, nor do existing staff have the required expertise to effectively provide oversight over such a program.

[2] For more information on CAOLA, please refer to the program's description which is included later in this section.

[3] An installed LMS is one in which you install the LMS on your own hardware and then manage and maintain the system with your internal resources. A hosted LMS is operated, supported, and maintained by an LMS vendor or a third party web-hosting provider outside of your organization.

[4] Bersin & Associates Research Report, April 2009.

Exhibit 7

Average Price for a Learning Management System Implementation in 2008 and 2009
(by Number of Registered Users)

	Installed Implementation			
	2008	2009	Dollar Change	Percent Change
500 Users.....	$ 72,370	$ 48,231	($ 24,139)	(33%)
10,000 Users.....	339,414	260,569	(78,845)	(23)
25,000 Users.....	601,358	486,076	(115,282)	(19)
100,000 Users.....	1,529,718	1,204,942	(324,776)	(21)

	Hosted Implementation			
	2008	2009	Dollar Change	Percent Change
500 Users	$ 55,622	$ 68,977	$ 13,355	24%
10,000 Users	266,404	314,444	48,040	18
25,000 Users	483,167	568,201	85,034	18
100,000 Users	1,304,830	1,288,054	(16,776)	(1)

Source: Brandon Hall Research, May 2008 and 2009. Based on a review of 92 Learning Management Systems.

Exhibit 8

Top 10 Learning Management Systems in Use by 668 Education Organizations in 2008*

	1 to 50 Users	51 to 500 Users	501 to 2,000 Users	2,001 to 10,000 Users	More Than 10,000 Users
Blackboard, Inc.....	37.9%	50.0%	68.2%	61.1%	51.1%
Moodle.....	58.6	50.0	37.9	42.6	31.9
ANGEL Learning	6.9	20.8	8.3	5.6	14.9
Desire2Learn Inc.	6.9	6.6	5.3	8.3	8.5
Developed In-House.....	10.3	1.9	3.8	5.6	10.6
eCollege	5.2	3.8	0.8	5.6	8.5
Oracle.....	3.4	3.8	1.5	0.9	2.1
Resource Development Co. ...	3.4	0.9	2.3	0.9	4.3
Articulate.....	5.2	NA	NA	1.9	4.3
Skillsoft, Thomson NETg.....	1.7	0.9	0.8	2.8	2.1

*Percents under each column will not add to 100% because individual organizations may use multiple Learning Management Systems in their programs.

Source: As reported by *Learning Solutions Magazine*, a publication of The eLearning Guild on 11/10/08. The eLearning Guild is the oldest source of information, networking, and community for e-Learning professionals.

The Department has not comprehensively looked at what the potential costs would be for courses made available on an SLVS. The Department would first have to decide whether it wants to produce and own its own course content or use

existing coursework. An initial Department analysis showed that the cost for a PDE fully-owned and produced course or the cost to buy or create a course could range from $35,000 to $50,000. Costs would be contingent on the degree to which external proprietary content is involved, as well as the intended learning time associated with the course (e.g., 45 hours, 90 hours, or 180 hours). At the high school level, where credits are still the basis for organizing the instructional program, courses need to align with a ¼ credit, ½ credit, or 1 full credit.

The Department believes that any virtual courses should be integrated with the curricular frameworks developed by PDE and made available through the Standards Aligned System (SAS).[5] The Department also believes that the virtual courses be aligned, where applicable, with the Common Core Standards recently adopted by the State Board of Education and with the content associated with the PSSA and Keystone Exams.[6]

Because Pennsylvania's school districts have implemented various learning management system formats and technological interfaces, any new statewide program would need to consider the feasibility of accommodating existing content models and user experiences. There are differing perspectives on how to best accomplish this standardization (such as utilizing Sharable Content Object Reference Model[7] specifications or adopting an open content standard that utilizes a learning object based focus), but dovetailing existing programs to the extent possible would help protect the investments schools have already made for virtual learning programs.

According to the Department, the amount that schools would be charged to buy an online course seat would depend on the level of participation in the SLVS by schools and students. In one scenario, the Department noted that the Commonwealth could choose to underwrite the cost of the LMS platform and that participating schools would be responsible for the per course fees. Such fees, if negotiated at the statewide level, could utilize economies of scale to reduce the overall cost. Fees could also be adjusted if the SLVS used local teachers, rather than vendor-supplied teachers, to teach a course.

PDE also notes that a school will have to invest resources to train staff to understand the LMS platform so that students can be registered for courses and so that student involvement and course completion can be monitored. The school will

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[5] The Standards Aligned System is a collaborative product of research and good practice that identifies six distinct elements which will provide schools and districts a common framework for continuous school and district enhancement and improvement: Clear Standards, Fair Assessments, Curriculum Framework, Instruction, Materials & Resources, and Interventions.

[6] The Common Core Standards describe what students should know and be able to do at all grade levels and prior to high school graduation in both English language arts and mathematics.

[7] Sharable Content Object Reference Model (SCORM) is a collection of standards and specifications for web-based e-learning.

also need to invest time and effort into determining whether a student is a viable candidate for online learning.

PDE offered another approach to creating an SLVS in Pennsylvania in the Commonwealth's Race to The Top (RTTT) funding application.[8] In the RTTT application, the Department identified the creation of an SLVS in Pennsylvania as a priority. The Department noted, "Pennsylvania will use RTTT funds to create a catalogue of 12 high rigor on-line courses–four each year for three years–available to all students across the state. This on-line course option will be especially effective in improving academic rigor in small, rural, and low-wealth school districts where rigorous courses are not available due to lack of resources."[9] The content of the first four courses created were to focus on science, technology, engineering, and mathematics. The Department anticipated a cost of $10,250,000 in federal dollars over three years and $400,000 in state dollars annually to develop the courses and implement the program.

The Department anticipated contracting with a vendor to develop the online courses for high school students. The application anticipated costs per course of $500,000, which would fund research and course development, including custom video production.[10] The cost of developing online courses varies according to the levels of sophisticated integrated technologies, and the Department acknowledges that the $500,000 per course fee represents a high-end solution. In addition to course development costs, the Department anticipated that an annual fee of $750,000 would need to be paid to a vendor to host courses and provide online registration and tracking of student participation and performance and provide services such as parent, student, administrator, and teacher portals. The application anticipated that after RTTT monies were expended, Pennsylvania's SLVS would transition to a for-fee model, based on a sliding scale dependent on the individual wealth of school districts.

One vendor we spoke with offered their estimate of what they might charge the Commonwealth to provide coursework to an SLVS. They estimated they would charge $2,500 for each individual course that they create, regardless of the guidance

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[8] Race to the Top is a $4.35 billion dollar education reform program enacted as part of the American Recovery and Reinvestment Act. The U.S. Department of Education awards RTTT grants to states through a competitive application process. RTTT awards were made in two rounds. The first round of awards was announced in March 2010. Pennsylvania was not selected in the first round for a grant. In July 2010, Pennsylvania was selected as a finalist in the second round. However, in August 2010 the winning states were announced, and again Pennsylvania was not selected. If selected, the state could have received up to $400 million to boost education reform and student achievement.

[9] Commonwealth of Pennsylvania Phase II Race to the Top application, Section F, Page 22.

[10] To explain the wide discrepancy in course development costs provided by the department, the Deputy Secretary of Education noted that "online courses can be built by the department for $35,000-$50,000 [as noted earlier] if an investment has been made in a high-quality course builder/management platform and there are digital learning objects accessible either through open-source or through a pre-existing contract with a vendor which can then be incorporated into the course structure to add the components necessary to engage students and allow for interactive learning."

they might or might not receive from PDE. The $2,500 would be a one-time fee to create an individual course that would be added to a list of courses that are accessible to everyone who pays a flat annual fee of $70. If they were to develop five courses they estimate a total development fee of $12,500. For supplemental courses that they developed and were subsequently made available to school districts through the SLVS, they estimated a charge of $390 per student if a large number of students registered for the course and $450 per student if only a few students registered for a course.

An additional cost would be incurred to create a library of learning objects for each course.[11] For $500,000 per course the company could create a variety of learning objects for a particular course, such as Advanced Chemistry. The learning objects library would be free to all users with Internet access.

IT Readiness in Pennsylvania School Districts

The Pennsylvania Virtual High School Study Commission in its December 2009 report noted that the 2008 Pennsylvania Technology Inventory (PaTI) survey, found that:

> . . . every school in the state had access to the Internet, with 68 percent having at least a 10Mb connection. The survey further showed that the Commonwealth has a 4:1 student-to-computer ratio.[12] Additional findings from the PaTI survey showed that students have access to school computers both before (56 percent) and after (82 percent) school. Finally, the survey showed that 69 percent of survey respondents indicated at least some of their students are taking online courses.[13]

The report also notes that a 2008 study by the Chester County Intermediate Unit reported that 95 percent of school districts statewide have access to broadband Internet. The availability of broadband connectivity allows greater access to online learning and other cyber services. Exhibit 9 presents information on technology, Internet connection speed, and other factors related to online education as reported by Local Education Agencies (LEAs) in the PaTI surveys for 2008-09 and 2009-10.[14]

In both 2008-09 and 2009-10, 81 percent of schools reported that they received their Internet connection through the LEA-Based Wide Area Network

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[11] A library of learning objects is composed of tutorials and learning activities from various sources that students can access to reinforce what they are being taught online.

[12] Each year teachers, administrators, and technology directors within Pennsylvania's more than 3,000 schools and LEAs are asked to complete various surveys that comprise the Pennsylvania Technology Inventory (PaTI). Data gathered from these surveys is used to provide an annual snapshot of technology in areas such as technology in schools, infrastructure, and connectivity.

[13] Final Report, Pennsylvania Virtual High School Study Commission, December 2009, pages 41 and 42.

[14] Local Education Agencies include school districts, career and technical centers, and charter schools. In FY 2008-09 there were 697 total LEAs: 500 school districts with 3,030 schools within the districts, 69 career and technical centers with 77 schools within the CTCs, and 128 charter schools.

(WAN), and 19 percent receive their Internet connection directly from an Internet Service Provider (ISP).[15] In 2009-10, the PaTI survey reported that statewide there were 337,275 high-capacity computers and 310,587 mid-capacity computers available for instructional use in schools. The survey also noted that the percentage of school rooms with no Internet access was negligible (<0.05%).

Exhibit 9

Data on Technology and Internet Connection for Local Education Agencies

Information Included in Surveys	2008-09	2009-10
Transport Capacity to the LEA Head End[a]	1 GB or higher: 42% 100MB to 999MB: 19% 10MB to 99MB: 25%	1 GB or higher: 44% 100MB to 999MB: 19% 10MB to 99MB: 23%
Internet Capacity to the LEA Head End	1 GB or higher: 9% 100MB to 999MB: 9% 10MB to 99MB: 50%	1 GB or higher: 9% 100MB to 999MB: 11% 10MB to 99MB: 52%
Instructional Computers With Internet Access Available to Students Outside of Regular School Hours	Before School: 56% After School: 82% On Weekends: 6%	Before School: 59% After School: 84% On Weekends: 7%
Source of LEA's Technology Budget	Federal Funds: 9% Local LEA Funds: 76% State Funds: 19%	Federal Funds: 12% Local LEA Funds: 76% State Funds: 10%
Teachers Regularly Use Technology to Enhance Learning in the Classroom	70%	71%
Who Provides Technical Support for the Equipment and the Network in the School	School Staff Member: 32% Tech Coordinator: 83% Voluntary Faculty: 23% Contract With IU: 11% Contract Non-IU: 16%	School Staff Member: 34% Tech Coordinator: 82% Voluntary Faculty: 22% Contract With IU: 9% Contract Non-IU: 15%
Which Applications of Technology Are Currently Regularly Being Used in Your LEA	Videoconferencing: 13% Streaming Video: 51% Virtual Field Trips: 6% Satellite Courses: 6% Online Student Assessment Tools: 48%	Videoconferencing: 18% Streaming Video: 67% Virtual Field Trips: 11% Satellite Courses: 10% Online Student Assessment Tools: 55%
What Percentage of Students Are Taking Online Courses	None: 31% Less Than a Quarter: 64% Between One Quarter and One Half: 2% Half or More: 3%	None: 30% Less Than a Quarter: 63% Between One Quarter and One Half: 3% Half or More: 2%

[a]Transport capacity equates to network capacity, i.e., the size of the pipe coming into the LEA. The larger the number reported, the faster the information is being received. Nineteen percent of LEAs in 2008-09 and 2009-10 reported a transport capacity of 100MB to 999MB. The term "Head End" is where the cable or wires are connected to an LEA's computer system.

Source: Pennsylvania Technology Inventory, PA State Aggregate for 2008-09 and 2009-10.

[15] An LEA-Based WAN is defined as a building to building network that connects buildings within an LEA.

Independent of the 2009-10 PaTI survey, LEAs were asked by PaTI to provide their best estimate as to the amount they spent on technology during the previous two fiscal years (2007-08 and 2008-09). Respondents were not to include salaries and benefits for staff in any of the calculations. Table 1 presents the estimates provided by school district respondents. The total amount spent on costs related to technology by school districts declined approximately 17 percent. However, the amount spent on distance learning (course fees, virtual field trips, etc.) increased approximately 29 percent. Internet and telecommunications service costs also increased approximately 2 percent.

Table 1

Data on Technology Costs Estimates as Reported by School Districts*

Amount Spent by Category	FY 2007-08	FY 2008-09	Percent Change
Total Amount Spent on Technology....	$419,289,895	$349,118,433	(16.7)%
Networks	51,851,425	51,391,921	(0.89)
Hardware.....	155,407,226	136,204,934	(12.36)
Training	9,503,493	8,994,345	(5.36)
Distance Learning	2,431,335	3,133,398	28.88
Service/Support.....	41,978,636	42,837,457	2.05
Internet/Telecommunications.....	35,242,714	35,868,988	1.78
Software	35,809,657	36,305,653	1.39
Supplies	19,428,048	22,807,041	17.39
Other	67,637,361	11,574,696	(82.89)

*455 (91 percent) school districts provided data to PaTI.

Source: Pennsylvania Technology Inventory, PA State Aggregate for 2008-09 and 2009-10.

According to the Deputy Secretary of Elementary and Secondary Education, it may be possible to incorporate an SLVS into PAIUnet. PAIUnet is a high-speed educational network that connects all 29 Pennsylvania Intermediate Units and their member school districts. The services available through PAIUnet include connection to the Internet, distance education, videoconferencing, research projects, virtual field-trips, professional development, hosted applications, campus safety, disaster recovery, and video-on-demand. PAIUnet, because it already is connecting school districts across the state, could potentially host an LMS platform for a potential SLVS, whether that platform were to be developed by PDE or an outside vendor. The ongoing maintenance of PAIUnet costs about $960,000 annually, before eRate discounts,[16] and that cost is currently borne by the Intermediate Units

[16] E-Rate is the commonly used name for the Schools and Libraries Program of the Universal Service Fund under the direction of the Federal Communications Commission (FCC). The program provides discounts to assist most schools and libraries in the United States to obtain affordable telecommunications and Internet access. It is one of four support programs funded through a Universal Service fee charged to companies that provide interstate and/or international telecommunications services.

directly. About 25 school districts are not connected to PAIUnet or a regional-wide area network out of choice, not lack of access.

In conclusion, the Pennsylvania Department of Education believes it could administer an SLVS if the General Assembly authorized such a program. However, the actual final costs to the Commonwealth, as well as the cost to school districts that choose to participate, could not be quantified at the time of this report. In addition, the Department would have to hire additional professional staff that has an understanding of what it takes to run such a statewide program. At the local level, the majority of school districts appear to have the necessary computer hardware and Internet connections that would allow an SLVS to be offered to students in those school districts.

Virtual Learning Practices in Pennsylvania School Districts

As an alternative to traditional public schools, in 1997 the Pennsylvania Legislature amended the Public School Code of 1949 to allow for the establishment of charter schools. Charter schools are "an independent public school established and operated under a charter from the local board of school directors and in which students are enrolled or attend. A charter school must be organized as a public, nonprofit corporation. Charters may not be granted to any for-profit entity."[17]

The act allows charter schools to operate free from many of the educational mandates that apply to traditional public schools. All school-aged residents qualify for free admission to any Pennsylvania charter school, with admission determined by availability of space and preference given to district residents.[18] As of November 2010, there were 135 charter schools in Pennsylvania.

With passage of Act 88 of 2002, the General Assembly added provisions for the establishment of cyber charter schools in Pennsylvania.[19] In the 2008-09 school year, 22,398 students statewide were enrolled in the 11 approved cyber charter schools. In the 2009-10 school year, 24,603 students were enrolled, an increase of 10 percent.

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[17] Act 22 of 1997, Section 1703-A. According to Section 1702-A of the Act, the intent of the General Assembly, in enacting this article, was "to provide opportunities for teachers, parents, pupils and community members to establish and maintain schools that operate independently from the existing school district structure."

[18] *Pennsylvania Charter Schools: A Look at School and Student Performance,* October 2009, Pennsylvania School Board Association, p.1.

[19] Act 88 of 2002, Section 1703-A defines cyber charter schools to mean, "an independent public school established and operated under a charter from the Department of Education and in which the school uses technology in order to provide a significant portion of its curriculum and to deliver a significant portion of instruction to its students through the Internet or other electronic means. A cyber charter school must be organized as a public, nonprofit corporation." The Department is also responsible for monitoring cyber charter schools' quality and integrity.

Because charter and cyber charter schools are independent public schools, there is no charge for enrolling a child. Funding for the enrollment of students must be provided by the student's home school district. If a student or a number of students decide to leave the regular public school setting for a charter or cyber charter school, the money allocated by the district for that student follows the student to the charter or cyber charter school. The district, however, is partially reimbursed by funding they receive from the state to offset this loss.[20]

Examples of Virtual Programs That Have Been Established to Provide Online Education

School districts and Intermediate Units across the state have increasingly developed their own cyber programs or contracted with vendors to provide courses for a set fee. The course offerings available through these programs can be used to supplement existing courses, allow students to take an existing school district course online, or can totally replace a student's brick-and-mortar classes with online courses. Online virtual classrooms allow schools to provide courses not traditionally available through the school district to interested students. Online courses also provide an alternative for those students not interested or motivated to sit in a traditional classroom and allow high achievers to forge ahead in their schoolwork. For students behind in their coursework, online classes provide a means for them to catch-up on classes they missed or failed. Online education is also a way for school districts to market themselves to those students enrolled in a cyber charter school to try to bring them back. One of their chief arguments that they make to students and their families who have migrated to a state cyber charter school is that graduates from school district-sponsored virtual programs receive a diploma from their home school district.

We identified at least four different virtual learning delivery models being utilized in school districts in Pennsylvania (See Exhibit 10).[21]

- Non-Profit Curriculum Delivery Companies
- For-Profit Curriculum Delivery Companies
- Intermediate Unit Stand-Alone Programs
- Intermediate Unit Consortium Programs

[20] The Pennsylvania Department of Education estimated that school districts provided approximately $794 million in the 2009-10 school year to charter schools. The Department estimated that approximately $224 million in state funds (28 percent) would be used to reimburse school districts for these payments in 2010-11.
[21] The programs described do not constitute the "universe" of online programs currently available in Pennsylvania.

Exhibit 10

Comparison of Selected Parameters for Programs in Pennsylvania That Offer Online Classes to Public School Students

Program	Number of Student Enrollments	Number of Course Enrollments	Cost for One Course Enrollment	Other Costs	Grades Served	Asynchronous or Synchronous[a]	Statewide Program
Non-Profit							
National Network of Digital Schools	1,500 in 2009-10	Could not provide	$173 to $302 per semester course	None, but do not provide computers	4K – 2nd and 5th - 12th	Asynchronous	Yes
Blended Schools (BSN)	In 2009-10 BSN was accessed by 70,000 users, not all of whom were students.	In 2009-10, 250,000 courses were accessed by BSN member districts	Charges are by size of user band purchased.	Schools purchase user bands at different levels. For 100 users cost is $10,250. For 500 users cost is $16,500.	K thru 12th	Asynchronous, however school districts may choose to use BSN materials and teach a synchronous course	Yes
For-Profit							
Virtual Learning Network	800 in 2009-10. As of December 2010, there were 600 full-time cyber students and 650 part-time students taking school district online classes	Could not provide	$150 for each customized course taken	$25,000 to set-up and customize 30 school district courses	High school	Asynchronous, but also offers a complete full-time cyber school program	Yes
K-12	Approximately 12,000 in all schools using K-12 curriculum	Could not provide	$450 for K thru 8th, $750 for 9th thru 12th for full year course	Price varies by what customer wants	K thru 12th	Asynchronous mainly, with some web-based classes	Yes

Exhibit 10 (Continued)

Program	Number of Student Enrollments	Number of Course Enrollments	Cost for One Course Enrollment	Other Costs	Grades Served	Asynchronous or Synchronous[a]	Statewide Program
IU Stand Alone							
Allegheny IU 3, Waterfront Learning (WL)	764 course requests for 85 different courses from over 450 students as of December 31, 2010	In 2009-10 under the previous program there were 392 course enrollment requests	$225 if school district teacher, $350 if WL teacher for asynchronous; $975 for synchronous	None	6th thru 12th for three tracks, K-12th for one track	Both asynchronous and synchronous programs	No
Beaver Valley IU 27, Regional Choice Initiative	172 in 2009-10	Total cyber courses taken was 498	$583 for NNDS course and $400 for FL Virtual course through IU	$7,000 annually	7th thru 12th	Asynchronous with synchronous capabilities if school district chooses	No
Capital IU 15, Capital Area Online Learning Association	239 in 2009-10 and 2,378 in 2010-11	470 in 2009-10; 3,060 in 2010-11	$600 for full year with vendor grader and $300 for no vendor grader	$12,000 or $24,000 depending on number of students in the school district	High school, middle school with permission	Asynchronous	No
IU Consortium							
IUs 17, 18, 19, and 20 Virtually Linking Instruction and Curriculum	554 students in 2009-10	Could not provide	$395 ($310 is to pay for teacher)	$4,500 annual payment by school districts	K thru 12th, primarily 7th thru 12th	Asynchronous	No
IUs 22 ,23, 24, and 25 Brandywine Virtual Academy	Data was not readily available and so could not be provided	355 in 2009-10, the majority of which were from Chester County school districts	$618 for one credit for member school districts, $680 for non-member school districts	None	6th thru 12th	Asynchronous, with teachers available during posted hours daily	Yes

[a]Asynchronous courses allow students to have access anytime and anywhere. Synchronous courses require students to take the course at a given time during the day or week.

Source: Developed by the LB&FC from meetings, telephone calls, and review of materials obtained from the programs reviewed.

Vendors contract with school districts to provide curriculum, training, administrative support, teachers and other supports. Working with a vendor can be beneficial in both public and private school settings. Schools operate in diverse environments and vendors have the advantage of being able to adapt their programming to meet the needs of individual clients. In addition, because vendors have been working in the online educational field for some time, they know how to recruit students and teachers, and have the ability to align curriculum in different states.

Another advantage of being with a vendor is that they can leverage resources, such as partnering with service providers from the private sector. Because online-learning vendors work with numerous schools, teachers, and students, they can often scale up easily, from just a few students taking a handful of online courses to thousands of online students taking full-time virtual course loads.[22]

Non-Profit Curriculum Delivery Vendors

National Network of Digital Schools (NNDS) is a Pennsylvania-based non-profit management foundation in Beaver County, Pennsylvania, that was formed in 2005 to offer comprehensive technology solutions and deliver high quality curricula to students. It is the exclusive provider of Lincoln Interactive courses, which are used in more than 200 traditional classrooms across fifteen states.[23] Over 250 online, interactive, semester courses are available for public, private, charter, and cyber schools and/or for home-schooled students. According to NNDS, in the 2009-10 school year 1,500 students in Pennsylvania schools took one or more Lincoln Interactive courses. Although students were still being enrolled for the 2010-11 school year, as of mid-September there were approximately 1,194 students enrolled in one or more Lincoln Interactive courses. Eighty-two public school districts, Intermediate Units, charter schools, and private schools are using Lincoln Interactive coursework. Of that number, 62 are public school districts and five are IUs.

NNDS specializes in providing curriculum for grades 4K-2, and 5th through 12th grade. The cost for a single course enrollment varies by the type of course and whether the course requires a textbook, either online or hard cover. Exhibit 11 shows the cost for courses without textbooks, with an online textbook, and with a hard cover textbook. The curriculum developed by NNDS is "as is" (i.e., not modified for individual school district curriculum) except for alternative education classes.

[22] Education Week Special Report, April 2010, p. 13.
[23] A review of NNDS website indicates that they predominately are working in Pennsylvania and Ohio as of October 2010.

Exhibit 11

Cost of Semester Courses for Student Taking Courses Through NNDS Using Lincoln Interactive Courseware

Courses[a]	Number of Courses	Average Cost of Courses
Green Courses	26	$173
Hybrid Courses	145	230
Classic Courses	196	302

[a]Green courses are courses without textbooks. Hybrid courses are courses with online texts. Classic courses are courses that have regular hard cover textbooks. Students have the option for 143 of the courses to take the course using an online textbook (Hybrid) or with a hard cover textbook (Classic). As is shown, courses costs more with a hard cover textbook.

Source: Lincoln Interactive Price List for 2010-11.

The cost for courses shown in Exhibit 11 are the total cost that students or the school district must pay. Because Lincoln Interactive does not supply technology, there is no additional charge for computers or software. Courses are semester long, and students go through the material at their own pace.[24] Each course supplements the online curriculum with various activities that may include web investigations, podcasts, interactive labs, power point presentations, videos, songs, and games. All courses are asynchronous, so they are available any time of the day or week and may be taken at school or at home. Students may enroll at any time and courses are updated as needed. NNDS evaluates courses to ensure that they continue to conform to Pennsylvania standards and requirements. Students are asked to provide input as to how effective the course was in meeting their educational needs after they have completed the course.

NNDS Lincoln Interactive employs approximately 80 to 100 teachers.[25] All teachers are Pennsylvania certified teacher/facilitators and are considered the teacher of record. School districts are required to assign a district staff person (guidance counselor, principal, teacher, aide, etc.) to be a Student Learning Advocate for the school. The advocate is to ensure students are doing the course work, to answer questions, and be a contact with the vendor. NNDS trains them on how to perform this role. Lincoln Interactive pays its teachers directly. The Student Learning Advocates are school district employees and are paid by the district. Most Lincoln Interactive teachers are employed full-time elsewhere and are supplementing their income by working for NNDS.

Lincoln Interactive teachers will answer e-mail questions about the course and assignments posed by students or the Student Learning Advocate. They also

[24] It is a decision of the student's home school district how long they may take to complete a course.
[25] According to NNDS staff they hire many teachers who have previous experience in public schools. Average experience level is 6 to 7 years.

grade quizzes and tests and help ensure the student is doing the coursework as assigned. Once a course has been finished, the coursework and grades, as well as any other materials, are provided to the school district. The school district decides what grade the student should earn for his or her work. There is no maximum number of students that are allowed to take a particular course.

Blendedschools.net (BSN) is a Pennsylvania-based non-profit organization incorporated in 2002 that provides a complete package of curriculum, technology, professional development, and a collaborative network to its member districts.[26] According to a company spokesman, it is owned by its members, which facilitates easy communication and collaboration on projects using the learning tools provided by the consortium. It offers courses developed by certified Pennsylvania educators to meet Pennsylvania assessment and academic standards. All courses are developed and deployed using the Blackboard Academic Suite Learning Management System platform. Blendedschools.net provides 100 percent hosting for all its products. It works with school districts to ensure that local networks are optimized to use this platform. Users are also provided with software tools as part of the course that they may install on their own computers to enhance their students learning experience. Membership includes the professional development required to implement the curriculum and technology.

BSN provides services to approximately 150 school districts and private schools in Pennsylvania.[27] Most members are Pennsylvania public school districts. A full-time member receives a number of services at no additional cost including:

- Four days of onsite training annually in various aspects of virtual teaching, course design, and other functions.
- A large library of free asynchronous training.
- Over 100 BSN courses for unlimited use, including annual revisions and updates.
- Free 24-hour help desk.
- Free membership to the Language Institute.
- Free data integration set-up for districts at the 1,000 user band level.
- Technologies including Blackboard, Blackboard Scholar, Wimba, Learning Objects, Inc., and Waypoint Rubric Builder.

The Scranton School District uses BSN and has been involved in online learning since 2005. The district uses online learning for approximately 40 students in its alternative education program. The district contracts with BSN for

[26] It grew out of the South-central Regional Consortium for Distance Learning which was founded in 1991.
[27] Of the 150 members, 125 are full-time members.

online programming, with a significant classroom component. The school district uses its own teachers who are the teachers of record. Courses are synchronous (teacher and students participating at the same time) with no more than 20 students allowed in any one class. Online learning is funded with school district money and a state subsidy for alternate education. According to a district official, BSN updates it courses every year, and all are written in accordance with state standards.

Members of BSN contract for a specific number of addresses (called "user bands") that they can then give to students, teachers, or other staff. One user, i.e., one student or staff member, can enroll in multiple courses without incurring additional fees. For example, at the low end, a school district may contract for 100 addresses for a fee of $10,250 annually. At the higher end, members may contract for 7,500 addresses for a fee of $142,500 annually. User bands over 7,500 are negotiable per semester. User band addresses are recycled in January and July of each year to allow members to increase the number of users at no additional cost. For example, by re-cycling in January, a school district with 100 users can increase exposure from 100 to 200 students or teachers. There are no other fees members must pay. However, BSN does provide additional services for which there are charges. These services include unlimited video conferencing at a cost of $2,000; data integration at a onetime cost of $4,000 with a $1,000 maintenance fee,[28] and additional training which is available to members beginning on day five (first four days of training are free) at a cost of $750 per day plus expenses. Exhibit 12 presents the annual fees paid by members of BSN.[29]

According to BSN, school districts take BSN courses and other materials and train their teachers to teach the courses themselves. The BSN approach also allows school districts to maintain a level of control over instruction and their students' experience. BSN offers a low-cost alternative for these schools because it does not employ and pay teachers to teach a course.

A second reason school districts contract with BSN is to entice students back from, or migrating to, a cyber charter school. When a student passes the course, whether in the brick-and-mortar classroom or through the virtual classroom, they earn school credit as part of their local school district. Students taking courses online are still required to take the mandatory Pennsylvania System of School Assessment (PSSA) tests to measure proficiency.

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[28] Schools or other clients that contract for user bands of 1,000 or greater pay no maintenance fee.

[29] BSN also operates a Language Institute which is designed to provide noncompetitive foreign languages to children. This is a separate division of BSN and functions outside the primary membership design. Languages offered include Arabic, Chinese, Japanese, Hindi, Spanish, French, German, and Latin. It costs $350 per district if they have full membership with BSN. Teachers are provided by BSN through contracts with educational institutions. There is an additional charge per course based upon what the student is doing.

Exhibit 12

Fee BSN Members Pay Annually by User Band*

User Band	Annual Fee	User Band	Annual Fee
100	$10,250	4000	$ 76,000
500	16,500	4500	85,500
1000	26,500	5000	95,000
1500	32,500	5500	104,500
2000	40,500	6000	114,000
2500	49,000	6500	123,500
3000	57,000	7000	133,000
3500	66,500	7500	142,500

* The school district buys a specific number of addresses (user band) and then assigns a specific address to each user. For that one price, all courses are available textbook free for the school district and the user to access at any time. The course material is provided online, however the school district must assign its own personnel to teach, give tests, grade, or monitor the course and track user's participation.

Source: BSN Band User Cost Price List.

BSN will serve approximately 75,000 students this coming school year (2010-11) in Pennsylvania and 300,000 nationwide. Last year, they had 70,000 users enrolled in 250,000 courses. Approximately 69 percent of their users access the curriculum in regular classroom settings. There are also small numbers in alternative education and home schools who access the curriculum.[30] Outside of Pennsylvania, BSN courses can be purchased at a cost of $35 per enrollment/per student, $1,200 to license a course, or $3,000 to buy a course.

For-profit Curriculum Delivery Companies

Virtual Learning Network (VLN) Partners, also based in Pennsylvania, is an educational consulting company formed in 2004 that works with public schools to help them compete with cyber charter schools and other external education providers. As of August 2010, VLN Partners had contracts with 41 public school districts and one Career and Technology School in Pennsylvania. They expect to continue to increase the number of districts that belong to their network by the end of the 2010-11 school year. VLN Partners provides products and services to set up and maintain cyber schools, alternative education programs, homebound programs, tutoring programs, summer school, credit recovery programs, and professional development opportunities.

Under VLN Partners' model, school districts determine the curriculum for the classroom and the company takes that curriculum and puts it into a format which allows it to be taught online so that it matches the flow and structure of what

[30] Historically, BSN use is consumed at a rate of approximately 90 percent of user band contracted for.

is being taught in the classroom. According to one of the founders of VLN Partners, "the key thing that sets us apart from anyone else in the K-12 online learning space is the fact that we customize the lessons presented on our network to match the scope and the sequence of lessons presented in each district's classrooms." VLN Partners charge $25,000 to set up and customize school districts' first 30 courses and $20,000 for each additional bundle of 30 courses. Once set up, the cost per student is $150 for each seat or course taken for on-campus access.

VLN Partners not only converts existing curriculum for students who are interested in, or required to take courses in an environment other than the traditional brick-and-mortar classroom, it also offers a complete, full-time cyber school program. The program, Cyber School in a Box,™ is valuable to all districts in the state because it enables them to offer a district-level alternative to cyber charter schools at a price that is much lower than the per-student fees that they are obligated to pay to cyber charter schools.[31] There is a yearly maintenance fee of $16,750, but VLN Partners handles all the technology and provides the teacher. The charge per student is $4,500 annually, which is less than what school districts have to pay when a student decides to attend a cyber charter school. VLN Partners also offers a return on investment guarantee that enables districts to finance the establishment of their own district-level cyber school programs from the savings they realized by implementing their model.

A further benefit of the VLN model for a district-driven full-time cyber charter school is continuity. According to VLN Partners, "A lot of cyber students go back to their home districts, and if they're not on the same page in Cyber School, they're not on the same page in the classroom." As reported, this is a common complaint among public school officials . . . "that when a student returns to the brick-and-mortar school, they are behind academically."[32] This is due mainly to the fact that most cyber charter schools have their own curriculums that do not necessarily match what is being taught at a student's home district. With a school district driven option, the curriculum offered coincides with what is being taught in the classroom, thus allowing for a more seamless transition, if necessary.

VLN Partners reported that at the end of the 2009-10 school year, they had approximately 250 students across the state enrolled in the Cyber School in a Box program and an additional 500 to 600 students taking one or more of their classes

[31] The Pennsylvania Department of Education support's a district's choice to offer its version of a cyber school. To offer such a program falls under local curriculum decisions that are up to school board officials. The state has standards; however, how a school teaches those standards is a local decision.
[32] McClatchy-Tribune Information Services, February 20, 2010.

online.[33] As of December 31, 2010, the active enrollment number in their full-time cyber school programs exceeded 600 students, and an additional 600 to 700 students are enrolled in on-campus programs. Because VLN Partners is converting existing courses already approved by the school district, the courses taught online are certified as meeting Pennsylvania standards. VLN Partners has to ensure any courses it teaches directly through its Cyber School in a Box program meet existing standards as well. Beginning in the 2010-11 school year, VLN Partners began offering supplemental courses at no cost to existing clients. School districts can enroll students in these courses, which are created and taught by VLN Partners teachers.

K12 Inc., based in Virginia, operates online school programs in 27 states serving more than 80,000 students across the nation. Although K12 is primarily a curriculum provider, they do offer multiple solutions to school districts and their students to meet their educational needs. The company may provide only curriculum for an established program, or it might contract with a school to provide teachers to teach the online courses that the school district purchases. K12 can also help school districts start their own cyber school or contract with a state-approved cyber charter to administer its program.

K12 is currently providing all of these options in Pennsylvania. For example, K12 is managing one state-approved cyber school through a contract with the cyber school board and is supplying curriculum for two other cyber charter schools. It also provides curriculum for cyber academies and programs administered by ten school districts and two Intermediate Units.[34] K12 staff reported that they serve approximately 12,000 students in Pennsylvania in all schools using their curriculum. K12 also has its own online program that students can attend, at cost, either part-time or full-time. For students enrolled part-time, the cost is $475 per full-year course for K through 8, $750 per full-year course for 9 through 12 ($375 for one semester course), and $790 per full-year course for AP courses ($375 for one semester course).[35]

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[33] Courses can be either run one semester or for the whole school year. That is a choice the school district makes locally. Generally however, a course equal's one semester. All courses are comprised of a combination of stored lessons that are customized for each district, asynchronous support from highly qualified Pennsylvania-certified teachers in the form of grading, threaded discussions, and e-mail interactions, and synchronous instruction from Pennsylvania-certified, highly qualified teachers. School district staff serve as a single point of contact to receive detailed reports that address each student's progress in completing the work. VLN Partners hires its own teachers for Cyber School in a Box and pays them directly. School Districts hire or assign teachers for those courses VLN Partners adapts so that they can be taught online.

[34] K12 could not provide information on the number of course enrollments. A review of K12's list of schools using their curriculum in states contiguous to Pennsylvania showed that one tuition free school in Delaware, one tuition free school in Ohio, one school district in Ohio, and one school district in Maryland were using K12 curriculum. No schools were listed for New Jersey, New York, or West Virginia.

[35] The program is called K12 International Academy. Per course fee includes online course content, teacher support, online learning management system, and certificate of completion to obtain credit from the student's home school district.

K12 courses are mostly asynchronous; however there are built-in times throughout the course where teachers/facilitators can provide real-time instruction through web-based classes and can check on a student's success in completing assignments. Normally, the home school district is responsible for assigning a teacher to facilitate a course. According to the K12 web site, "daily lessons are delivered by a public school teacher who's employed by the district or school. Some programs also assign a small number of virtual students to an existing classroom teacher, while others hire additional teachers to teach virtual school students. Teachers are responsible for monitoring and measuring student progress." All curriculum offered for sale to school districts has already been approved to meet Pennsylvania standards for content.[36] K12 offers more than 160 credit-bearing courses. Courses are designed for the K through 8th grade, while separate courses have been designed for 9th through 12th grade students. Curriculum is available for multiple versions of core courses, Advanced Placement, credit recovery, honors, world languages, and electives. K12 offers over 90 high school courses in multiple versions of English, math, science, history, and world languages, as well as electives in fields like computing and technology.

The complete K12 program includes the following components:[37]

- Online School web-based learning management system for online lesson content, lesson scheduling, progress reporting, assessments, and communication.
- Administration Management System to maintain students' cumulative files and allows for student reporting, grading, transcripts, class/teacher scheduling, progress evaluations, student enrollment, and course placement.
- Curriculum offering more than 21,000 lessons, with printed books and materials for each course.
- Professional development of teachers and administrators on how to operate a virtual school.
- Program to help schools meet deadlines for beginning their program and get up and running in 90 days.
- Student outreach and communication program to help recruit students.

Teachers provided by K12 for its own online administered program are either full-time or part-time and are certified. Each teacher is responsible for a certain

[36] According to company officials, over the last few years, K12 has been doing more blended learning. This involves providing coursework online that a student may then take to their brick-and-mortar school on a weekly or semi-weekly basis for assistance.

[37] Schools decide how much or how little of these components they want to purchase. School districts can take advantage of their existing resources (current teaching staff, administrators, district finance office, IT office, and curriculum team) to operate efficiently.

number of sections. Generally, a full-time teacher in the K-8 grades may have a full course load for the full year of up to 55-65 students. A full-time high school teacher responsible for a single subject may have 175 or more students. Teacher compensation is comparable to that of public school teachers, according to K12 staff.

Under the K12 program, the more courses a school district buys per student, the less the cost is per course. Depending on grade and subject, courses are available either without a teacher or credit (Independent Study), with a teacher for credit (Teacher Supported), or without a teacher for credit (Independent Study with Credit). Independent Study courses may be purchased either in full or with a monthly subscription.[38] The price for individual courses is shown in Exhibit 13.

Intermediate Unit Stand-Alone Programs

Allegheny IU (03), beginning in the 2010-11 school year, transitioned from a limited online education program called "e-CADEMY" to a more robust program called "Waterfront Learning" that offers more options for participating school districts.[39] For example, under the e-CADEMY program only asynchronous courses were available. Waterfront Learning now offers both asynchronous and synchronous courses.[40] Waterfront Learning offers a variety of synchronous and asynchronous courses for core content, electives, college preparation, Advanced Placement, credit recovery, and remediation. Options are available for both full-time and part-time participation. Students may enroll year round with the approval of the student's home school district.

Under the e-CADEMY program, individual online courses were available across the state; however most students were from school districts in Allegheny County. In the summer of 2010, the IU reported that 99 public and private schools were participating in the online program.[41] Students could attend only part-time and only with the agreement of their home school district. There was no full-time program through e-CADEMY. In the 2009-10 regular school year (September through May), there were 392 requests for 83 different courses. In the summer (June 30 through Mid-August 2010), e-CADEMY had 941 requests for 47 different

[38] The monthly subscription provides access to the course for a fixed monthly fee without any commitment. The subscription automatically renews each month unless the subscriber calls and cancels. Purchases in full may be pre-paid at time of check-out for a 10 percent discount or payments may be spread over 12 months. Teacher Supported and Independent Study with Credit courses require payment in full at time of purchase. All teacher supported courses except world language courses are delivered through the K12 International Academy.
[39] Allegheny County IU also administers a regional public cyber charter school for students in Pennsylvania. The Pennsylvania Learners Online (PALO) cyber charter school was founded with the cooperation of 10 school districts in Allegheny County in 2001. Over 500 students in all grades attend classes from their homes via the Internet through PALO.
[40] According to IU staff, the e-CADEMY online program was in operation for nine years.
[41] Thirty-eight of these schools were located in public school districts in Allegheny County.

Exhibit 13

Course Pricing for K12 Courses*

Independent Study Courses: 12 Month Payment Option				
	First Student		Sibling	
	Per Course/Month	Total Per Month	Per Course/Month	Total Per Month
Buy 1 Course	$22.00	$22.00	$18.04	$18.04
Buy 2 Courses	$19.00	$38.00	$15.58	$31.16
Buy 3 Courses	$18.67	$56.01	$15.31	$45.93
Buy 4 Courses	$18.00	$72.00	$14.76	$59.04

Independent Study Courses: Monthly Subscription[a]	
Buy 1 Course	$29.95/Course
Buy 2 Courses	$29.95/Course
Buy 3 Courses	$29.95/Course
Buy 4 Courses	$29.95/Course

Teacher Supported Courses		
Grades	Per Course Fee	
K - 8	Full Year	$450
K - 8	Semester	$225
9 - 12	Full Year	$750
9 - 12	Semester	$375

*Some courses may require the purchase of materials for an additional fee. Depending on the contract negotiated between K12 and a school district, additional services such as diagnostic testing, test preparation, supplemental supplies, technology resources, and other services may be provided. A final cost is negotiated depending upon the scope of services, number of students, and other factors.

[a]Monthly subscription offers individual student access to a K-8 subject for a monthly fee without any commitment. The subscription automatically renews each month unless the subscriber cancels. This option allows a student to try a course before deciding if they want to purchase it in full or if a student plans to use the course as a supplement to another program.

Source: K12 Course Pricing Guide for 2010-11.

courses. Adjunct teachers were hired by the program and paid $20 per hour for course facilitation. Courses were available as core courses, as well as credit recovery. Vendors were contracted to provide courses as needed. The primary vendor, education2020 (e2020), provided most courses, as it continues to do for Waterfront Learning. Advanced Placement courses were also available through another vendor. The cost schools paid for year round general education and credit recovery courses was $350 for one full credit and $225 for a half-credit. Courses were offered as asynchronous, with some synchronous office hours. They were aligned by the vendor and the IU with Pennsylvania standards and matched school district courses.

Beginning in August 2010, Waterfront Learning enrolled students for the 2010-11 school year. As of December 31, 2010, Waterfront Learning had received 764 course requests for 85 different courses from over 450 students. Waterfront

Learning serves students in grades Kindergarten through 12th. The prior online school, e-CADEMY, was only for high school students. School districts must choose to join Waterfront Learning even if they had already been participating in the e-CADEMY program. As of October 2010, there were 10 school districts with students enrolled in Waterfront Learning. Other school districts in Allegheny County may enroll students if they choose. During the traditional school year, only school entities located within Allegheny County are permitted to enroll students. The summer program is expanded to allow any school statewide to enroll students in the program. Courses are offered on a semester or full school year basis, depending on the course.

Waterfront Learning offers four full cyber options. Districts may use these as an alternative for students who desire to attend a full-time cyber charter school. Students remain school district students and are eligible for a diploma from their home school district. (Exhibit 14 has more information on these options.) Waterfront Learning provides teachers for three of the options, and the home school district provides teachers for the fourth option. Teachers must meet certification requirements. Most teachers have full-time jobs in traditional brick-and-mortar schools and teach an online course to supplement their income. Teachers must respond to a student's email question within 24 hours and are required to access their email every day. Two times a week teachers must be available to be contacted by telephone. School districts pay the cost for online courses and provide the necessary computer and other electronic equipment.[42]

No specific limit exists on the number of students that may be enrolled in a particular class. However, teachers are limited on the size of their caseload, depending on the type of course (intensity and workload) being taught. Adjunct teachers are hired by Waterfront Learning and are either already teaching in a regular school or are teaching for a cyber charter school. The school contracts with approximately 15 to 20 teachers, who are paid $20 an hour for up to 20 hours per week.

The IU contracted directly with BlackboardK12 for a Learning Management Platform that costs $50,000 to $75,000 annually for a system that allows Waterfront Learning a user band of 2,500. That means they can have up to 2,500 different users (students, teachers, administrators) assigned an account.

Beaver Valley IU (27) was awarded a federal grant in July 2007 that it used to begin a four-part program called the Regional Choice Initiative (RCI).[43] One of

[42] The fees were developed to be competitive with the online learning market and cyber school environment while maintaining the rigor and the integrity required by the school districts served.

[43] In July 2007, the U.S. Department of Education awarded 14 projects in 12 states a share of a $25 million grant under No Child Left Behind's Voluntary Public School Choice Program. The grant, which amounts to $9.1 million for Beaver Valley IU over five years, is to help states and schools create or expand public school choice initiatives. Beaver Valley IU was the only Pennsylvania organization of any kind awarded a grant. The 2010-11 school year is year-four of the grant.

Exhibit 14

Online Options Available to Students Through Waterfront Learning*

Benefits/Features	Full Cyber Option Option 1 Asynchronous (WL Teacher)	Option 2 Synchronous (WL Teacher)	Option 3 Asynchronous & Synchronous (WL Teacher)	Option 4 Asynchronous (District Teacher)
Computer & Internet Access	X	X	X	
WL Teacher	X	X	X	
Professional Development				X
Content/Courses				X
Synchronous		X	X	
Asynchronous	X			X
Full-Time Students	X	X	X	X
Grades	6 -12	K - 12	6 - 12	6 - 12
District Teacher				X
Price Per Student for Six Courses	$3,600	$5,500	$4,300	$2,500
Students Needing Specially Designed Instruction	$2,000	$2,000	$2,000	$2,000
Single Course Options				
Waterfront Learning Teacher	Full Year Asynchronous (per student/per course)			$350
Waterfront Learning Teacher	Full Year Asynchronous, AP (per student/per course)			$700
Waterfront Learning Teacher	Full Year Synchronous (per student/per course)			$975
School District Teacher	Full Year Asynchronous (per student/per course)			$225
School District Teacher	Full Year Asynchronous, AP (per student/per course)			$475
Concurrent Course Options				
School districts may purchase concurrent licenses allowing access to 45 asynchronous e2020 courses. District must provide equipment and staff.[a]				$1,500

* The IU purchased a Blackboard LMS from K12 Inc. to allow it to offer curriculum from different vendors.

[a] A concurrent license model allows for a defined number of licenses shared by an undefined number of users connected to a network. This model permits simultaneous (or concurrent) use of the vendor courseware by one or more users, up to a maximum number of users agreed to at the time of purchase. For example, purchasing 10 of these floating licenses would allow 10 students to use the program at the same time.

Source: Waterfront Learning Services Price Guide.

the four programs that the IU committed to begin was a cyber learning program.[44] Fifteen school districts in Beaver County belong to RCI, but only 10 have elected to participate in the cyber program thus far. The online courses for individual students and supplies for the cyber services option were not funded through the grant but through funds each district pays to Beaver Valley IU (BVIU) to be part of RCI

[44] There was no cyber component in place at the IU, nor at most of the school districts, prior to the grant.

had the grant not been awarded. Prior to the federal grant being awarded participating school districts paid the IU $8,000 the first year and $7,000 the second year. These non-grant funds were used to purchase equipment such as laptops with printer/scanner/copier capabilities in anticipation that districts would want to purchase courses for their students who wanted a cyber option of attending school.

Originally to obtain courses for the online program, the IU contracted with the National Network of Digital Schools (NNDS). Individual NNDS courses are paid for by the school districts which participate. The NNDS provides certified teachers for their courses, who become the teacher of record. School districts assign a local staff person as a monitor for those students taking an NNDS course. The monitor may be a teacher, a guidance counselor, or another staff member. School districts may use their own equipment or lease computers from the IU. All NNDS courses are asynchronous. Online services for districts using NNDS curriculum began in September 2007.

Beginning in the 2009-10 school year, courses were available through Florida Virtual Learning Network (FVLN). Perpetual licenses for 20 FVLN courses to serve grades 7 through 12 were purchased through the RCI grant at a cost of $374,000. The courses purchased included four English courses, four math courses, four science courses, four social studies courses, one PE course, and elective courses in Spanish, computing for college, reading for college success, psychology, and health.

The curriculum is kept by the IU on a server (Moodle) and is available for free to school districts in the IU service area.[45] Staff of the IU train the local teachers who will be teaching the FLVN online courses on how to use the curriculum to instruct students online. Teachers have the right to adapt an FLVN course to meet their specific teaching goals. FVLN courses can be taught synchronously with Elluminate, due to licenses purchased by BVIU. Elluminate allows teachers and students to communicate and interact on a one-on-one basis or as a group.[46] Teachers, for example, can access online students work during their free time and provide online instruction to students if needed.

For the first two school years (2007-08 and 2008-09), students who participated as online students worked exclusively in NNDS courses. In the 2008-09 school year, the IU reported that nine school districts enrolled 74 students in one or more NNDS online courses. In 2009-10, the IU reported that 11 school districts enrolled 97 students in NNDS online courses and that six school districts enrolled 75 students in FVLN courses taught by local teachers. The total number of cyber courses taken was 498.

[45] School districts would still be responsible for paying the teacher.
[46] Elluminate Live is a web conferencing program developed by Elluminate Inc. Elluminate "rents" out virtual rooms or spaces where virtual schools and businesses can hold classes and meetings.

Exhibit 15 lists costs paid by participating districts for NNDS courses, as well as the cost if a district opts not to have district teachers teach students online using the FLVN courses purchased through the grant. There are two types of FLVN courses. Those purchased through the grant are free to the districts except for the cost to hire a teacher. Those not purchased through the grant are listed at the cost to purchase directly from FLVN. Courses typically run for one semester regardless of where the course was purchased. Other than the cost for courses, there are no other additional costs school districts must pay to participate in the IU's RCI program. Individual districts may ask teachers to teach online after their normal school day. The district and the teacher decide if an additional stipend will be paid.

Other costs to set up the RCI program that were paid with the federal grant include a one-time charge of $50,000 to Moodle for their open-source LMS (this is where the FLVN courses that were purchased are stored), $200,000 to EduLink for student achievement tracking services, and approximately $200,000 annually to the RAND Corporation for oversight evaluation of the program.

Capital Area IU (15) started the Capital Area Online Learning Association (CAOLA) in 2009. Online classes were available beginning in the 2009-10 school year for grades six through twelve. As of September 2010, CAOLA had 20 districts or individual schools as members, with 16 of them also members of the IU.[47] The IU has a three-year contract, which expires at the end of the 2011 fiscal year, with EdisonLearning to use their learning management platform.[48] The IU pays $95,000 annually (total of $285,000 over three years) for an unlimited number of users. The annual payments provide CAOLA with implementation services, system management, training and orientation, per school setup fee, technology services, and teacher training.

In September 2009, CAOLA had 153 students taking 175 courses. Only one of those students was full-time. At the end of the 2009-10 school year, 239 students were taking 470 courses. Fourteen of those students were full-time. In 2010-11, 2,378 students are enrolled taking 3,060 individual courses. Of that number, 80 took all their classes online.

[47] Schools outside the IU delivery area are Bermudian Springs School District, the School District of York, Maritime Academy Charter School, and Schuylkill IU 29 Marlin Center. These schools pay the same fees as other school districts.

[48] EdisonLearning provides approximately 90 unique courses to CAOLA. Aventa Learning provides five elective courses.

Exhibit 15

Beaver Valley Regional Choice Initiative Price for Courses

Single Course Option	Cost
Lincoln Interactive – National Network of Digital Schools	$583 Per Course
Florida Virtual Learning Network Course Purchased Through RCI[a]	$400 Per Course
Florida Virtual Learning Network Course Purchased Directly From Florida Virtual School[b]	$700 Per Course
Rental of RCI Laptops Imaged With All Necessary Software for NNDS and FLVN Class	$600 Annually
Technology Support Fee of Laptops and Software	$500 Annually
Processing Fee for Course Material and Textbooks	$100 Annually
Core Course Option (English, Science, Mathematics, and Social Studies)	
Four Lincoln Interactive (NNDS) Core Courses	$2,332 Annually
Florida Virtual Learning Network Core Courses Purchased Through RCI[a]	$1,600 Annually
Four Florida Virtual Core Courses Purchased Directly From FLVN	$3,000 Annually
Full Package of Four Core Classes, Plus Equipment and Services Package	
Full Lincoln Interactive (NNDS) Package	$3,532 Annually
Full Florida Virtual Learning Network School Package	$4,200 Annually
Full Florida Virtual Learning Network Core Courses Purchased Through RCI Package	$2,800 Annually

[a] For an FLVN RCI owned course, a Beaver County teacher will be subcontracted by the IU at a rate of $300 per student per academic year. Online teachers receive an additional $100 dollar stipend if the student passes the course by earning a "C" or better with the academic year defined by the school district.
[b] A teacher is provided for FLVN courses purchased directly from the Florida program. The teacher may or may not be in the school district; however they are certified in Pennsylvania and become the teacher of record.

Source: Beaver Valley Intermediate Unit Cyber Options Price List, as of August 2010.

School districts participating in CAOLA pay membership fees based on their school census. The fees are as follows:

- Schools with a student census of 300–1,000 pay $12,000.
- Schools with a student census of 1,001 and up pay $24,000.

Exhibit 16 shows the costs that school districts participating in CAOLA pay for each course in which a student enrolls. The annual membership fee and the price per enrollment are all that school districts have to pay to allow one of their students to take a supplemental course. Online courses are self-paced with established deadlines for coursework. Students receive credit from their home school district if they successfully complete an online course.

Exhibit 16

Cost of CAOLA Courses for 2010-11

Course Type	Price Per Enrollment With Asynchronous Grader [a]	Price Per Enrollment Without Asynchronous Grader
Full Year	$600	$300
Semester	300	150
Quarter	150	75
Advanced Placement Full Year	700	350
Advanced Placement Semester	350	175
Summer	160	80

[a] Teachers are provided by the vendor. They are state certified and are considered the teacher of record for a course. They are available through email if a student has a question. Teachers are to respond within 24 to 48 hours for graded assignments. School districts must have a local staff person assigned as a site coordinator. Each student is also assigned a mentor to keep track of how they are doing.

Source: Capital Area Online Learning Association Price Guide for 2010-11 School Year.

In addition to supplemental courses, students have the option of attending a full-time online program. The total fee for the full-time online program is $4,850 and includes up to six full-time course enrollments, asynchronous grading, synchronous tutoring if necessary, instructional materials, and Internet reimbursement. Each full-time student is loaned a laptop computer, with all of the software needed, and a printer/scanner. Part-time CAOLA students have to provide their own computer and Internet access, although they can take coursework at their home school district if they receive approval to do so.

Intermediate Unit Consortium Programs

We defined Intermediate Unit Consortium programs as instances where two or more Intermediate Units have joined together to offer an online program to member school districts. These programs are formed with the agreement of school districts receiving programming through participating IUs.

Virtually Linking Instruction and Curriculum (VLINC) is a collaborative cyber services partnership program provided by four IUs to member school districts in northeast and northcentral Pennsylvania.[49] As of July 2010, 38 of 64 school districts served by the four IUs were participating in VLINC. Students remain enrolled in their home school district and are allowed to participate in any school activity offered to students who remain in the traditional brick-and-mortar classroom. The program provides both supplemental and full-time enrollment opportunities with the approval of a student's school district. Full-time cyber students may

[49] The four Intermediate Units utilizing VLINC are BLaST (IU 17), Luzerne (IU18), NE Educational (IU 19), and Colonial (IU 20).

complete their coursework entirely online or through a blending of online and traditional on-site coursework. All costs for participating in VLINC are borne by the school district. In the 2009-10 school year, 372 students were enrolled in VLINC from school districts located in IU 18 and IU 19. There were also 170 students enrolled from IU 17 school districts and 12 from IU 20, for a total enrollment of 554 in the 2009-10 school year.[50] In 2008-09, IU 18 and 19 enrolled 210 students, and IU 17 enrolled 96 students. Data could not be provided on the total number of courses in which these students had enrolled.

School districts pay their respective IU $4,500 annually to participate in VLINC. The fee covers administrative and some technology costs. Individual IUs pay a fee to blendedschools.net for the use of their learning platform. IUs 17, 18, and 20 paid $12,000/IU for the 2010-11 school year, which permits them to provide access to 200 users/IU (students or teachers). IU 19 paid $16,500 for the 2010-11 school year to provide access to 500 users in IU 19 (students or teachers). Ninety percent of the curriculum for VLINC is provided by blendedschools.net in this manner. For those courses, in addition to the administrative fee, participating school districts are charged $85 by their respective IU for each course enrollment and $310 for each student enrolled in a course for the cost of the IU hiring a certified teacher/facilitator for each course.[51]

Teachers can teach up to two classes, with class size limited to 15 students.[52] The online facilitators are highly qualified teachers in their respective content areas and are primarily teachers already teaching in brick-and-mortar schools in northeastern Pennsylvania schools.[53] IUs train teachers for the VLINC program, and are responsible for managing the teacher's performance. To date, approximately 225 teachers have been trained and are available to teach an online course through VLINC.[54]

The IUs have also received state grant funding to provide extensive professional learning experiences focusing on eLearning, ePedagogy, and online course development to regional educators. Over the past three years, approximately 115 teachers participated in the opportunity to develop courses for the VLINC program. An online consultant monitors courses regularly to address any student or teacher concerns. Families work through a school district point of contact and are only eligible to participate with consent from the Superintendent. The online curriculum

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[50] IU 17 administers its own program and IU 19 administers programs for the other three IUs.
[51] Other vendors and their course costs identified by IU staff include Aventa Learning which charges $600 for a full credit course; Florida Virtual which charges $750 for a full credit course and Lincoln Interactive which charges $600 for a full credit course.
[52] Under this scenario, a teacher would be paid $4,650 for teaching a course if there were 15 students enrolled.
[53] Teachers interested in becoming facilitators for VLINC must provide a copy of their state certification when applying for a position.
[54] All VLINC teachers for blendedschool.net and Lincoln Interactive/NNDS courses are Pennsylvania-certified. Every effort is made to secure Pennsylvania-certified teachers from other VLINC course vendors.

provides additional opportunities for students, including remediation, enrichment, course recovery, gifted education, and summer school.

If students do not have their own computer system, the technology needed for VLINC is to be provided by the home school district. Most students already have their own computer at home or have access to a computer at school. Technical support is provided by the school district for any computer they provide or by VLINC if the technical problem is related to the course being taken. Most coursework is taken online, but if textbooks are needed, they are provided by the school district. The cost for textbooks would normally be under $100.

Looking forward, VLINC is exploring programming enhancements, with an Advisory Council, designed to increase student success and academic achievement. Those enhancements include additional service options for districts and flexible programming.

Brandywine Virtual Academy (BVA), created by IU 24 in partnership with the 21st Century Cyber Charter School (21CCCS) during the 2005-06 school year, provides students an online option to earn supplemental or required high school credit. BVA provides online courses through an exclusive agreement with 21CCCS. Three other suburban Philadelphia IUs who partnered with IU 24 to create 21CCCS supported the expansion of BVA to their member districts. As a result of the partnership, member school districts within those IU's benefit from a reduced rate for courses if they pay for the BVA enrollment. While supported primarily by member districts and IU 24, families as well as non-member school districts have purchased online courses through BVA.

As a marketplace service, BVA contracts with 21CCCS to provide courses for students in grades six through twelve. The courses are asynchronous and are available 24 hours a day, 7 days a week. Certified teachers employed by the cyber charter school teach the BVA courses. Teachers are available during posted daily hours, including in the evening. Teachers communicate with the students and their parents/guardians via email, in their online virtual office, and by toll-free phone number.

BVA courses, which meet state academic standards, are available to all Pennsylvania middle and high school students. Students and/or their resident school district are responsible for securing computers and Internet connections. Microsoft Office is required; a printer, although recommended, is not required. If the course uses a textbook, BVA will supply it to students with the expectation that it will be returned at the completion of the course. Students must contact their school guidance department to ensure that their school district accepts outside/online high school credits. All course applications must have the student's guidance counselor's approval. Students can attend the course at any time during the day and work at

their own pace as long as they meet deadlines. Students are required to access their BVA email account daily. All courses have a mid-term and final activity assessment.

The course fees are the responsibility of the student or parent, unless the student's home school district pays for the course. Generally, the district will pay for the course if the student has obtained prior approval. The tuition fee depends upon the credit value of the course and whether or not the student's school district of residence supports enrollment. No refund of fees will be made if a student drops the class after it has begun. The cost for member districts (school districts located in Bucks, Chester, Delaware, and Montgomery Counties) is lower than non-member districts. (See Exhibit 17 for the cost of courses.) Credit recovery or make-up credit courses are only for high school students who have a failing grade on their transcripts. The make-up credit course grade does not replace their previous grade but does allow them the opportunity to earn full credit for the course. There is no annual fee charged to school districts wishing to participate. In 2009-10, there were 355 course enrollments in BVA, 93 percent of which were from school districts in Chester County.

Beginning with the 2010-11 school year, an independent version of the BVA courses has been added. This version of the online courses provides minimal teacher assistance and requires the student to work independently. The teacher grades all course work. Technical support is available as needed. The fee for the "independent version" is significantly lower that the full service version. More information regarding BVA is available at www.BrandywineVirtualAcademy.org.

Exhibit 17

Brandywine Virtual Academy Course Pricing for Units Purchased

Member Course Pricing

Original Credit Courses		Credit Recovery Courses	
Credit Value	Cost	Credit Value	Cost
1.0	$618	1.0	$340
0.5	$341	0.5	$187
0.25	$189	0.25	$103

Non-Member Course Pricing

Original Credit Courses		Credit Recovery Courses	
Credit Value	Cost	Credit Value	Cost
1.0	$680	1.0	$374
0.5	$375	0.5	$206
0.25	$207	0.25	$113

Source: Brandywine Virtual Academy course pricing for 2009-10. Course pricing had not changed as of August 25, 2010.

Online Learning for At-Risk Students

Online learning is an additional tool used by some school districts in Pennsylvania for at-risk students, which the U.S. Department of Education defines as students who are likely to fail at school, i.e., dropping out of school before graduation.[55] According to the online learning providers with whom we spoke, online coursework is generally the same for the at-risk student as it is for the traditional student. For example, if a student is taking Algebra for original credit, the course would generally be the same for a student taking Algebra for credit recovery. The material can be used for both types of students because of the flexibility of online coursework to be individualized for each student. The difference for at-risk students is that some online course providers use pre-testing to evaluate the material that a student has already mastered. The course will then concentrate on material that is new, and the student will not have to repeat the entire course. Online learning for at-risk students is one tool that schools are using to engage these students to help them complete their high school educations.[56]

The cost for using online learning appears to be the same whether students are taking courses for credit recovery or courses in advanced placement, at least for the two providers discussed below. These providers, for example, charge per enrollment, per 'address,' or per computer 'port,' meaning that for each enrollment purchased by a school district, multiple students can take online courses throughout the school day. The enrollment fees per course generally allow a student access to a provider's full range of online courses, whether for original credit, credit recovery, or an AP course.

For this review, we spoke to two providers that specialize in online learning for at-risk students and contacted four urban school districts: Philadelphia, Pittsburgh, Scranton, and Erie. A more detailed review of The Philadelphia School District follows the discussion of the two providers.

Apex Learning. Two of the school districts for which we gathered information, Philadelphia and Erie, use Apex Learning for their online learning programs for at-risk students. In total, for the 2009-10 school year, 46 school districts in Pennsylvania used Apex Learning for a myriad of online learning programs, including those for at-risk students. Within these districts, 4,888 students generated 39,428 semester-long course enrollments. Founded in 1999, Apex Learning pro-

[55] The U.S. Department of Education examined several different variables associated with at-risk students: basic demographic characteristics, family and personal background characteristics, the amount of parental involvement in the students' education, students' academic history, student behavioral factors, teachers' perceptions of students, and the characteristics of the students' schools. The Southwest Educational Laboratory concluded that a number of variables can contribute to an increased risk of failure. These variables include: belonging to a single head of family household, low socio-economic status, minority group status, being an English language learner status, low educational attainment of parents, disabilities, psychosocial factors, or gender.
[56] Other avenues for at-risk students may include night classes, one-on-one tutoring, accelerated schools, and summer school.

vides a variety of courses with a digital curriculum to meet high school graduation requirements. Apex Learning digital curriculum includes:

- Foundations Courses: Geared toward high school students and transitioning middle-school students who are not working at grade level, these courses provide remediation in math, reading, and writing.
- Literacy Advantage Courses: These courses are targeted toward high school students who are not reading proficiently. They are normally core courses that have been retooled for literacy challenged students.
- Core Courses: These courses assume that a student is prepared for grade-level coursework, but they also include extra support for those students who might benefit from it.
- Honors Courses: These courses are for students who want to accelerate their learning and prepare them for advanced placement courses.
- Advanced Placement Courses: These courses meet higher-education expectations of college-level courses and prepare students for AP exams. They are for those students who are reading at grade level and who have proven successful with high school coursework.
- Exam Prep: Preparation for various exams.

The school districts generally purchase enrollments from Apex Learning for $200 each, giving each enrolled student access to the entire Apex Learning digital curriculum. Should a student withdraw or complete the coursework, the district can enroll another student who can take the desired courses. This delivery model is administered by school district teachers, who act as teachers of record. If a student takes a course using Apex Learning teachers virtually, the cost is $350 per course, per student.

Each Apex Learning course is based on national and state standards. Courses are organized into semesters and are developed by Apex Learning using a team of educational experts, including curriculum experts, instructional designers, subject matter experts, assessment specialists, and teachers.

Erie School District also uses Apex Learning for its online learning component for at-risk students. During the 2009-10 school year, 450 at-risk students took 900 courses through the district's credit recovery program. A single teacher from each content area monitors student progress and provides supplemental tutoring. For its alternative education program, Erie operates a Transition School in which students who have been habitually truant complete online courses, again through Apex Learning, but with the support of a full-time teacher. The Transitional School began the school year with about 60 students, and over the course of the year, between 140 and 200 students were enrolled. Because the students are referred to the

program when they accumulate five illegal absences in a quarter, or 20 in the year, they arrive at different points in the academic year, and with dramatically different records of performance.

For those reasons, online courses for at-risk students need to have the flexibility to customize instruction for these types of students. According to a district administrator, since these students usually have additional behavioral and academic problems, the district provides a full teaching staff to create more of a hybrid model so that at-risk students do not just sit in front of a computer without further classroom help. In Erie's Alternative Education Program, for students with more severe behavioral or disciplinary issues, the district has implemented a similar program based on the Apex Learning digital curriculum. Because students are at a variety of entry points in the curriculum, teachers supervise and supplement the computer-based instruction. The district has a cyber services specialist who coordinates enrollment in both the IU-based, and district online programs.

NovaNET (Pearson). Both the Philadelphia and Pittsburgh school districts purchase online coursework from NovaNet for their at-risk population. In Pittsburgh, online coursework is available in alternative schools for credit recovery only. Targeted students in Pittsburgh are those who are 'fifth year' seniors or those who are more than one year behind their grade levels.

NovaNET was originally developed at the University of Illinois. It underwent continual improvement and was turned over to the University Communications in 1993 until it was acquired by Pearson Education in 2000, where its development and expansion continue.[57] Nationally, approximately 400,000 students take NovaNET courses in a school year. In Pennsylvania, NovaNET serves about 7,600 students at 68 sites[58] across the Commonwealth, including programs for at-risk students.

All courses are currently developed using Pearson (Prentice Hall) texts and materials, which are written by teachers and are peer-reviewed before they are published. Staff develop and align content to evolving state standards in addition to performing an analysis of state standards with every major release of new content. Pearson reports that it upgrades and revises courses on a continual basis at no charge to the customer. A current listing of NovaNET courses includes:

- English
- Mathematics

[57] Pearson offers both NovaNET Legacy and NovaNET Courseware. Legacy is loaded into local school district computer systems whereas Courseware is completely web-based.

[58] Site is a location and a school district may have multiple sites. For example, there could be more than one high school in a district or a district could have online learning at both a middle school and a high school. Additionally, some districts run programs in off site locations–like a YMCA or even a drop in location in a shopping mall.

- Science
- Social Studies
- School to Work (e.g., Career Foundations, Employability Work Skills, and Business)
- English as a Second Language
- AP Courses
- Performance Packages (e.g., Write and Speak, The Arts, Scientific Applications, and Decision Making)
- ACT Preparatory Curriculum
- SAT Preparatory Curriculum
- PSSA Preparatory Curriculum
- Electives

The courseware serves grades six through twelve and serves all types of students, and particularly at-risk students. NovaNET courses have been targeted toward credit recovery and, according to a Pearson representative, the focus has been on the high school grades, but some content is being used by middle schools that have identified at-risk students. Offerings include core and credit recovery courses. Courses are prescriptive in nature, in that a student takes a pre-test and may 'test out' of certain material and will start the course with new material. Students must obtain a minimum of 80 percent proficiency on each concept in each module in order to test out. This ensures that students have mastered the material down to the objective level before moving on.

Similar to other online course providers, school districts purchase concurrent licenses or 'ports' at approximately $700 to $1,000 apiece.[59] If a school district purchases 20 ports, 20 students may log in at one time, with different students logging in during each period. Each port allows students access to the entire curriculum. Delivery methodology is fully online and is based upon local implementation, but generally a blended model is used, wherein students are enrolled in online courses with a local mentor or teacher monitoring instruction. Typically, in most school districts, there is a lab environment with students cycling in and out during the school day. NovaNET courses are all self-paced and span one or two semesters, based on subject matter. Courses are on a rolling enrollment basis, and students may start a course whenever necessary.

Pittsburgh public schools also use online learning for students in its alternative school for credit recovery purposes. Students in the alternative schools are

[59] School districts generally purchase ports on an annual basis, with a 25 percent discount for a three-year purchase. Ports may also be added and would be pro-rated for shorter periods of time, for example, summer school.

those who are 'fifth year' or those who are more than a year behind in their studies. The school district purchases NovaNET 'ports' from Pearson. Twenty-five ports were purchased, and although they can be used 24 hours a day, they are only used during school hours, with different students using the ports throughout the school day. Ports cost approximately $1,000 each per year, and each port gives access to all courses. The district uses its own teachers for online learning, and they are the teachers of record. Students are not allowed to take more than two online courses at one time and generally work at their own pace. Students take a pre-test before the course and the computer prescribes the work according to the needs and skill levels of the student. A post-test is also required. Pittsburgh's online learning is funded with state funds through an alternative education grant and the ELECT (Education Leading to Employment and Career Training) program, an initiative to help keep teen parents in school.[60]

The School District of Philadelphia. The School District of Philadelphia implemented online learning programming in January 2009 for at-risk students in grades 9-12. At-risk students include dropouts, pregnant and parenting teens, those at risk for academic failure, truants, those under the care of the child welfare system, and formerly adjudicated students. The district uses online coursework for both its Grade Improvement Programs and Multiple Pathways to Graduation programs.[61] All online coursework must be approved by each building's principal. Although principals also determine the targeted student populations for their buildings, the school district recommends first targeting seniors who need a few credits to graduate and 9th graders who need several credits to be promoted to 10th grade.[62] Currently, 830 students are taking online courses in the district.

The district offers nearly all of its core courses online and offers 20 different courses overall, with full and partial courses in most subject areas. Courses are delivered on a quarterly, semester, and school year basis. In general, students receive one credit for passing a full course and half or quarter credits for partial courses. Grade Improvement and Multiple Pathways programs courses are self-paced, but do have a start and end date that coincide with academic quarters, semesters, or school year, depending on the course and program. The district also offers online learning for summer school; these courses end when final grades are submitted for summer

[60] The Pittsburgh School District reported that as of January 2011 these funds will have been exhausted.
[61] Multiple Pathways to Graduation aims to provide students who have previously dropped out or those with low high school credits the chance to return to school through an "educational pathway," designed to assist students in earning their high school diploma or its equivalency. Programs include: Gateway to College, Accelerated High School Programs, Literacy Programs, Adult Diploma, GED programs, and Educational Options Programs.
[62] Ninth grade is a critical time and often most dropouts can be traced to this year. According to the report *Easing the Transition to High School: An Investigation of Reform Practices to Promote 9th Grade Success* states that "academic failure during the transition to high school is directly linked to the probability of dropping out. Over 60% of students who eventually dropped out of high school failed at least 25 percent of their credits in the 9th grade, while only 8% of their peers who graduated had similar difficulty." (Nettie Legters & Kerri Kerr, Center for Social Organization of Schools, Johns Hopkins University, 2001).

school programs.[63] Parents are not charged tuition for any online coursework, neither during the traditional school year nor during summer school.

The district's online learning is mostly classroom based, with a significant classroom component. Three hundred and sixty-five of the 830 students enrolled in online learning, who are also in certain Multiple Pathways programs, take all of their coursework online. They are in accelerated high school programs and take their courses in a school building, in a synchronous environment, with certified teachers available for regular support. The district does not use proctors or class monitors for online learning. Additionally, all current high school students and their guardians have access to Student Net, which includes digital library resources, individual learning plans, and transcript information. However, Student Net is not a component of the online learning courses discussed here. The district does not maintain a separate registration process or a separate student information system for online courses.

In the virtual learning environment, the district adheres to teacher student ratios required by each program. The ratio is 1:15 for the Grade Improvement Programs and 1:22 for Multiple Pathways programs. The teacher of record is provided by the district. Teachers and administrators implement the online learning curriculum while program managers from the district's central office communicate with online vendors, analyze reports, create roll-out plans, and coordinate resources for schools to support implementation.

All online learning courses are purchased and the district does not develop any coursework in-house. The district works with online learning vendors, such as Apex Learning and NovaNET, to customize courses to align with its core curriculum. A-Plus is a third vendor from which the district contracts to provide online learning. All vendors provide professional development for teachers and administrators, create plans with the district to implement the programs in schools, and provide regular usage reports. The district pays approximately $150 per student for online learning, with funding from both the state and school district dollars, and also pays for the computers, printers, and other hardware, as well as all maintenance on this equipment.

All coursework offered by current online vendors was vetted through the district's Office of Teaching and Learning to ensure alignment with Pennsylvania State Standards. Teacher performance is monitored by building administrators. Currently, the district is revisiting its online course offerings to ensure continued alignment with all district course content. Course upgrades and revisions are done by the district in partnership with the online course providers. This is done at the expiration of each contract term, or as needed based on any changes to the core curriculum.

[63] The School District does not offer online courses for dual enrollment at this time.

The district defines, in part, the success rate of online learning as the number of students that successfully complete their enrolled courses and receive credits toward graduation. Since the district has been using online learning for only one year, it has not yet compiled a report on student outcomes. Administrators are currently reviewing data from the first year of implementation to determine future trends and goals, as well as reviewing other components of online learning such as student-teacher relationships, student access to technology outside of the classroom, costs and benefits of the program, teacher professional development, and student achievement.

V. Appendices

APPENDIX A

PRINTER'S NO. 3101

THE GENERAL ASSEMBLY OF PENNSYLVANIA

HOUSE RESOLUTION

No. 592 Session of 2010

INTRODUCED BY O'NEILL, ROEBUCK, ADOLPH, DiGIROLAMO, GRUCELA, MARKOSEK, MURT, READSHAW, SAYLOR, STEVENSON, LONGIETTI AND McILVAINE SMITH, JANUARY 20, 2010

REFERRED TO COMMITTEE ON EDUCATION, JANUARY 20, 2010

A RESOLUTION

Directing the Legislative Budget and Finance Committee to study the costs associated with the State's establishing the Pennsylvania Virtual Learning Program and conducting a study of the funding models used by other states with comparable programs.

WHEREAS, The Virtual High School Study Commission established by section 1615 of the act of March 10, 1949 (P.L.30, No.14), known as the Public School Code of 1949, has completed its final report with a recommendation to establish the Pennsylvania Virtual Learning Program; and

WHEREAS, Equity in public education across this Commonwealth can be enhanced through a virtual learning program aimed at supplementing students' public school experience by expanding course offerings; and

WHEREAS, All public school entities in this Commonwealth will have the ability to enroll students in virtual learning courses through the program to enhance their education and provide courses that would be otherwise unavailable due to funding or personnel restraints; and

Appendix A (Continued)

WHEREAS, Information about the funding mechanisms used by other states and entities for supplemental virtual learning programs is necessary for the design and formation of the Pennsylvania Virtual Learning Program; therefore be it

RESOLVED, That the Legislative Budget and Finance Committee be directed to conduct a study that explores the various models of implementation and funding mechanisms used in the establishment of supplemental virtual learning programs in other states or entities; and be it further

RESOLVED, That the study include, but not be limited to, costs associated with virtual learning delivery models including intermediate unit consortium models, course development entity contracts and projected costs for various courses including core subject courses, advanced placement and enrichment courses and courses tailored for at-risk students in credit recovery, dropout prevention and dropout recovery programs; and be it further

RESOLVED, That the Legislative Budget and Finance Committee develop a report in consultation with staff from the Education Committee of the House of Representatives and staff from the Virtual High School Study Commission; and be it further

RESOLVED, That the Legislative Budget and Finance Committee report its finding to the House of Representatives within six months following the adoption of this resolution.

APPENDIX B

Summary Information From *Costs and Funding of Virtual Schools*[1] Augenblick, Palaich, & Associates (October 2006)

In its school finance work around the country Augenblick, Palaich, & Associates (APA) was increasingly being asked about virtual schools—in particular, what they knew about the funding of such schools. To respond to this need, APA embarked on year-long project, funded by the Bellsouth Foundation, to examine issues related to the cost and funding of virtual schools.

Costs

APA identified five broad categories of costs for online programs: management, instruction, course development, technology set-up, and technology personnel.

1. Management—includes administrative personnel, travel, supplies, office furniture and equipment, facilities, insurance, legal, postage, marketing, public relations, recruitment, and strategic planning.
2. Instruction—includes instructional personnel, professional development, travel, instructional supplies and materials, assessment/test preparation, contracted services, and software licensing.
3. Course Development—includes costs associated with developing or purchasing new courses and maintaining or redoing existing courses.
4. Technology Set Up—includes computers and office set-ups for all staff members, computers and connectivity for students, the Learning Management and Student Information Systems, and networking hardware, software, and connectivity.
5. Technology Personnel—includes all non-management personnel dedicated to technology, software licenses for all non-instructional staff, and contracted services.

Program costs fall into two categories, start-up costs and ongoing costs. A new state-led supplemental program, designed to serve approximately 500 students full time equivalents, or provide 3,000 units of instruction in year one, will require about $1.6 million to adequately fund start-up activities before providing instruction. This first year is used by the program to develop its educational program and infrastructure, and nearly 80% of start-up costs are in management and course development.

[1] Full title is: *Costs and Funding of Virtual Schools: An examination of the costs to start, operate, and grow virtual schools and a discussion of funding options for states interested in supporting virtual school programs.*

Post-startup operating costs are heavily dependent on the five variables discussed above. The most significant variation in costs depend on where students take online courses (from home or school) and the characteristics of the students served (number of special needs students and the level of responsibility the school has for serving such students).

APA estimates base cost for serving students with no special needs range from about $7,500 per FTE for a state-led, supplemental online program that has high levels of quality assurance and instruction and is growing, down to as low as about $3,650 per FTE for a program that is large, not growing, and not investing in significant professional development for teachers and similar quality measures. Funding at the lowest level would allow a program to operate day-to-day but would not allow the program to invest in research, development, innovation, quality assurance, and planning for growth. An FTE equates to 6 full-year courses, or 12 one-semester course. This translates to between $608 and $1,250 for a full-year course or between $304 and $625 for a one-semester course.

Funding

States have five primary options for funding virtual schools:

(1) State appropriation

(2) Funding formula tied to FTE public school funding

(3) Course fees

(4) No state role

(5) A combination approach

State appropriations are a common way for states to fund state-led online programs. The funding either flows directly from the state to the school or through another channel, such as the state department of education. Typically, the level of funding appropriated is based more on what resources a state has available and less on what the actual costs are of running a state virtual school effectively.

After an online program has established operations for a few years and gained acceptance among educators, the state may consider shifting funding for a virtual school to a per-pupil funding formula. This is the approach that Florida has taken with the Florida Virtual School (see below.)

Funding formulas, established by state law, dictate the amount of funding that will flow from the state to local school districts. Typically, these formulas are driven by four factors:

Appendix B (Continued)

1. Student Counts—the number of students attending schools within the district;
2. Student Need—characteristics of students served (e.g., number of students that qualify for free and reduced priced lunch, special education, and English Language Learners);
3. Wealth—property tax base (the state provides less aid to districts that can raise more resources locally); and
4. Effort—state incentives might be provided to a district to raise more in taxes and if it does, it is rewarded with more state aid. Section 3

A formula-based approach to funding virtual schools, as with all public schools, appears to make the most sense. Determining the proper way in which funding can follow a student from the brick-and-mortar school to the virtual school is tricky and often controversial (as it means taking money away from one entity and giving it to another).

The funding formula model for virtual schools often resembles how brick-and-mortar public schools are funded in that it is based on per pupil counts. A key difference with this model in the funding of virtual schools is it tends to be based on successful course completion. This is very different than brick-and-mortar public schools which are funded based on average daily attendance or enrollment with no aspect of funding tied to successful outcomes.

Another funding option for state-led programs is charging course fees from school districts registering students in online courses. Many state-led programs charge course fees that range from $50 per semester course to several hundred dollars per semester course. These fees usually do not cover the operating or marginal cost of delivering the course, and in all cases do not cover program operating costs such as professional development for teachers, administration, and similar. Therefore course fees sometimes provide revenue to a state-led program that is in addition to, but never instead of, a state appropriation or other funding source.

States may want to consider a combination of some of the above approaches to funding and supporting virtual schools. For example, a state may provide an appropriation for start-up for a state virtual school, planning grants for local virtual schools, and then move to a formula-based system to fund the ongoing operations of these schools. Additionally, the state may elect to provide some financial incentives to spur the use of the virtual school(s) within and among school districts and communities across the state or to allow local districts to raise taxes to support virtual schools in their communities.

Descriptions of how two states, Florida and Minnesota, fund their virtual schools are illustrative. Florida Virtual School started with an appropriation and now receives funding based on a per pupil allocation. Minnesota virtual schools are funded on a per

pupil basis based on daily student counts, in the same way as all public schools in Minnesota. (Additional information on these states is in the report.)

Other Policy Issues

Figuring out how to fund virtual schools is a big issue for policymakers but not the only one that they face regarding virtual schools. Other policy issues that states may grapple with related to virtual schools include:

1. Educating state policy makers about the benefits, costs, opportunities, and limits of online education.
2. Counting students. State policies often emphasize seat-time or hours spent on instruction or other pacing methods (e.g., semester blocks, etc.), or attendance laws. All of these concepts of time in instruction do not directly apply to virtual schools and may need to be revised to better accommodate such programs.
3. Quality and accountability. Among virtual school proponents there is grave concern about quality of sub-par programs. A few bad online programs in any state can harm all virtual schools from bad publicity due to failure to serve students with quality teaching and courses.
4. Recognition of costs for management and oversight. To most effectively oversee a virtual school, a state or school district needs to allocate appropriate personnel to this task—ideally personnel that do not have other conflicting or numerous responsibilities in addition to oversight of the virtual school(s) in their jurisdiction.