A Preliminary Investigation of Maine Virtual Charter School Costs Relative to the Essential Programs and Services Funding Model

Amy F. Johnson
Fleur Hopper
James E. Sloan

Maine Education Policy Research Institute
University of Southern Maine

July 2016

Table of Contents

Executive Summary i

Introduction and Study Goals 1

Literature Review 2

Maine Virtual Charter School Distinctions 5

Methods and Limitations 6

Maine Virtual School Profiles 9

- **Maine Connections Academy (MCA)** 9
- **Maine Virtual Academy (MEVA)** 10

Data Analysis & Findings 10

- **Overall Allocation and Spending** 10
- **Comparative Costs of School Program Components** 12
  - Membership: Enrollment and Attendance 13
  - Staff (teacher, other professionals) ratios 16
  - Employee Benefits 20
  - Regional salary adjustments 22
  - Staff Costs: Overall Implications 23
  - Substitute teachers 23
  - Supplies and equipment 24
  - Professional development 25
  - Co/extra-curricular activities 26
  - System administration 27
  - Operation and Maintenance of Physical Plant 28
  - Students with Limited English Proficiency 28
  - Economically Disadvantaged Students 29
  - Technology 30
  - Student Assessment 31
  - Special Education 32

Transportation 34
Field Trips & Other Travel 34
Career and Technical Education (CTE) 35
Other added expenses 36

Summary of Costs Relative to EPS 36

Conclusions & Recommendations 39

References 40

Appendix A: Summary of Virtual School Policies in Other States 43

A Preliminary Investigation of Maine Virtual Charter School Costs Relative to the Essential Programs and Services Funding Model

Amy Johnson — *Amyj@maine.edu*
Fleur Hopper — *fleur.hopper@maine.edu*
James Sloan — *James.sloan@maine.edu*

Executive Summary

In 2015, the Maine State Legislature's Joint Standing Committee on Education and Cultural Affairs commissioned the Maine Education Policy Research Institute (MEPRI) to study the state's Essential Program and Services (EPS) K-12 education funding model in relationship to the funding for Maine's two virtual charter schools. The study was initiated with a review of available literature and reports on virtual school funding in other states. Because the structure of Maine's virtual schools differs from typical models in other states, most notably because core academic subject teachers are required to teach from one central physical location, further cost analysis was conducted using only Maine-based data. The expenditure data available was from one school (Maine Connections Academy) in its first year of operation in 2014-15. This limits the generalizability of the findings.

Data were analyzed by categorizing the virtual school expenditures as much as was possible into nineteen separate components of Maine's Essential Programs and Services funding model. In each category, the report first provides a qualitative description of how the virtual school carries out that type of work. This provides background to aid the reader in understanding how virtual schools operate, and in interpreting any differences in expenditures. Next the quantitative analysis for that cost category is detailed, followed by a concise summary of whether the expenditures for that category were higher, lower, or similar to the EPS cost model, unless inadequate data were available to make a determination.

Overall per-pupil funding and spending was substantially less in Maine's virtual charter schools than in non-charter public schools. The Maine virtual charter school studied was allocated $8,117 per pupil in FY15 compared to $10,909 per pupil in non-charter public school districts, and spent $8,270 per attending pupil compared to $11,105 per pupil (not including transportation costs). The study found that the expenditures at the virtual school were higher

than the EPS model allocations for teacher benefits, the regional salary adjustment, supplies and equipment, and technology. System administration costs were also higher, but similar to non-charter public schools. Maine charter schools pay a 3% fee to the charter school commission that is not reflected in the EPS model and is thus also a higher cost. The school had lower expenditures than the EPS model for extra- and co-curricular activities, operation and maintenance of the physical plant, and substitute teachers. Higher student-to-teacher ratios suggest lower teacher salary costs, but other staff types had ratios that were lower than the EPS model. An overall generalization of staff costs could not be made because salary costs, benefit costs, regional salary adjustments, and substitute teachers had mixed comparisons to the EPS model; some were higher and some were lower. Some components were indeterminate due to expenditure data that were unavailable or grouped with other types of costs, namely: professional development, instruction of Limited English Proficient students, support of economically disadvantaged students, and student assessment. Spending in special education could not be compared to EPS because a specific funding allocation was not calculated but was comparable to per-pupil spending in non-charter public schools. Spending for Career and Technical Education (CTE) and student transportation was zero, which matched the EPS allocation provided to the school.

A Preliminary Investigation of Maine Virtual Charter School Costs Relative to the Essential Programs and Services Funding Model

Amy Johnson
Amyj@maine.edu

Fleur Hopper
fleur.hopper@maine.edu

James Sloan
James.sloan@maine.edu

Introduction and Study Goals

In 2015, the Maine State Legislature's Joint Standing Committee on Education and Cultural Affairs commissioned the Maine Education Policy Research Institute (MEPRI) to study the state's Essential Program and Services (EPS) K-12 education funding model in relationship to the funding for Maine's two virtual charter schools. The study was designed to identify a preliminary framework for a funding model specifically for virtual charter schools. To address this goal, the study investigated the following guiding questions:

1. What models exist for virtual school funding elsewhere in the country?
2. How do Maine's virtual charters differ from the national models depicted in existing studies?
3. How do the costs of Maine's virtual charter schools differ from the EPS funding model components for other Maine public (non-charter) schools? Are there costs unique to Maine virtual charters that do not map to any existing EPS components?
4. What next steps for further cost model development are recommended for policymakers?

The first question was addressed through a review of available literature and recent documentation related to virtual school funding. The second question was answered through conversations with representatives from the Maine Charter School Commission and from the two Maine virtual schools, Maine Connections Academy (MCA) and Maine Virtual Academy (MEVA). Question three was examined using procedures described in the methodology section, and the last question was based on a synthesis of all of the above information.

Literature Review

While virtual charter schools are a recent addition to Maine's educational landscape, they have existed in the United States for nearly two decades (Clark, 2013). At present 43 states have enacted legislation to permit the operation of virtual charter schools (Education Commission of the States, 2016) and 25 states had virtual schools in operation during the 2014-2015 school year (Germin, Papre, Vashaw and Watson, 2015).

Among states that permit the operation of virtual charters schools, the majority fund these schools on a par with brick-and-mortar charter schools and/or non-charter public schools. Eleven states, including Colorado, Florida, Arizona, and Ohio, fund virtual charter schools at a reduced rate (Nathan, 2013). Colorado, for example, provides virtual charters with the minimum funding available to brick-and-mortar charter schools and both Indiana and Louisiana fund virtual charter schools at 90% of brick-and-mortar charter schools. Florida is unique in funding virtual charter schools based on performance. In the Florida model per student funding is reduced relative to students' course completion. While virtual schools may theoretically be funded at 100% of the per-pupil allocation for brick-and-mortar schools, they may ultimately be funded at a lower rate (Pazhouh, Lake and Miller, 2015). Appendix A provides an overview of approaches to virtual charter school funding in 43 states and the status of virtual learning opportunities, including both virtual charter schools and virtual learning within non-charter public schools, in these states.

At the time of writing, no state appears to have developed a funding model specifically for virtual charter schools based on their unique structures and expenses (Molnar, Huerta, Shafer et. al., 2015). In the past several years, however, a number of state legislatures have considered the question of funding virtual charter schools from a variety of angles. Some state legislatures have simply examined the expenses of virtual charter schools, without categorical or per-pupil comparisons to brick-and-mortar charter schools or non-charter public schools. Colorado is one such state. Until 2014, Colorado state law required an annual summary of virtual charter school expenditures, along with performance data, be provided to the legislature (the law has since been amended to require this summary every five years). In their 2014 summary report to the legislature, the Colorado State Board of Education reported that among

Colorado virtual charter schools, almost half of expenditures were spent on professional services, contracted services, curriculum licenses, tuition, or non-staff personnel; 33% were spent on salaries and benefits; 12% were used to purchase supplies; and 1% of expenditures were for property and physical plant (Colorado Department of Education, 2014).

Other state legislatures have sought to compare virtual school funding to brick-and-mortar charter school and/or non-charter public school funding. In 2007, Wisconsin passed Act 222, which required the state's Legislative Audit Bureau to conduct an extensive evaluation of virtual charter schools operating in the state. Comparing the SY2007-2008 per-pupil costs of the state's 15 virtual charter schools to the average per-pupil costs of their chartering public school districts, the auditors found that 10 of the 15 had per-pupil costs lower than their chartering districts (Wisconsin Legislative Audit Bureau, 2010). The virtual charter schools' per-pupil expenditures ranged widely, from $3,687 to $28,581. Per-pupil expenditures were highest among single-district virtual charter schools and among those with the lowest number of enrolled students (Wisconsin Legislative Audit Bureau, 2010). Among the state's five largest virtual charter schools, payments to educational management organizations (EMOs) – which included fees for virtual education platforms, internet subsidies, computers, instructional supplies, information technology support, and advertising—accounted for between 49% - 80% of expenditures (Wisconsin Legislative Audit Bureau, 2010). Among all 15 virtual charter schools taken together, spending on staffing accounted for 46% of expenditures, and curriculum related costs accounted for approximately 48% (Wisconsin Legislative Audit Bureau, 2010).

In 2014 the New Mexico legislature's Education Legislation Study Committee compared the per-pupil program costs generated by NM's two virtual charter schools—New Mexico Connections Academy and New Mexico Virtual Academy—to the state average, and found that the virtual charters generated program costs approximately 22%– 26% less than the state average for non-charter brick-and-mortar public schools (Kleats, 2014). The author attributed this lower fund-generation capacity, and presumably lower cost, to lower than average costs for instructional staff, special education, and enrollment growth.

Also in 2014 the Kansas Legislative Post Audit Committee examined the costs of operating full-time virtual charter schools compared to the funding allocated to the schools in

the state's funding formula, using a sample of 159 students from four of Kansas's virtual charter schools (Kansas Legislative Post Audit Committee, 2015). Comparing costs and state funding on a per-pupil FTE basis, auditors found that the per-pupil funding received by the sampled virtual schools via the state's funding formula was $400-$1,500 less than the schools' actual cost of educating a student. The authors recommended that the legislature's House and Senate Education Committees to consider changing the state's current funding model for virtual charter schools. Suggestions for alternative approaches included funding virtual charter schools based on students' course completion, providing block grant funding to school districts operating virtual schools, and/or providing differentiated funding based on students' age (Kansas Legislative Post Audit Committee, 2015).

Other states have taken a broader approach to the question of virtual charter school funding, addressing funding policy without specifically examining or comparing the various costs associated with virtual charter school operations. In 2013 the Illinois State Legislature passed a moratorium on the establishment of new virtual charter schools until December, 2016, and required the state's Charter School Commission to develop recommendations addressing the performance, costs and oversight of virtual charter schooling (Illinois State Charter School Commission, 2014). The Illinois Charter School Commission found that the state's existing funding model created incentives for state-wide (versus single district) virtual charter schools to enroll students from school districts with higher per-pupil funding, as funding followed the student from their school district of residence to the virtual charter school. The authors recommended several changes to Illinois's approach to funding virtual charter schools, including basing payment to virtual charter schools "on student success and evidence of student engagement," determining payments to virtual charter schools without regard to students' sending districts' per-pupil funding allocation, and that payments to virtual charter schools should not exceed the state's "foundation level," a per-pupil funding allocation intended to represent the minimum adequate funding for each K-12 pupil through a combination of state and local funds (Illinois State Charter School Commission, 2014, p. 17).

In addition to state legislatures, educational policy groups and advocacy organizations have also explored the costs of virtual schooling and attempted to draw some comparisons

with non-charter public schools. A 2006 study by the education research and policy group Augenblik, Palaich and Associates concluded that full-time online education costs between $7,200 and $8,300 per full time enrollment (Anderson, Augerblik, DeCescre and Conrad, 2006). This amount was approximately on par with the study's estimated average expenditure per FTE in a non-charter public school setting when the costs of transportation and facilities are excluded (approximately $7,727). The authors noted the potential variability in the costs of online education, however, based on the how long the program had been established, as high start-up costs associated with establishing a new virtual school can raise a program's per FTE costs initially (Anderson, Augerblik, DeCescre and Conrad, 2006).

In the Thomas B. Fordham Institute report *Education Reform for the Digital Era,* Battaglino, Halderman and Laurans (2012), estimated the current per-pupil cost of virtual schooling in the United States to be between $5,100 and $7,700, significantly less than their estimated average per-pupil cost of $10,000 for brick-and-mortar public schools. The authors suggest that labor, content acquisition, technology and infrastructure, school operations and student support are the major drivers that contribute to lower per-pupil costs for virtual schooling compared to non-charter brick-and-mortar schooling.

The limited research available leaves the question of how best to fund virtual charter schools unanswered. While states themselves have explored the issue of virtual charter school funding from various angles, little solid guidance exists regarding how, and indeed if, to adjust existing funding formulas to adequately and appropriately meet the needs of virtual schools.

Maine Virtual Charter School Distinctions

While comparison data from the review of other states provides helpful context, it is not readily comparable to the costs of the virtual charter schools in Maine. This is because the Maine Charter School Commission established unique parameters for the Maine virtual schools that are not typically part of the models in other states. The most notable of these requirements is that the schools must employ teachers who live in Maine and work from a central brick and mortar location within the state. All "core" academic courses are thus taught by teachers who are in daily contact with each other and with their Head of School. This is a

marked difference from virtual models prevalent elsewhere, in which qualified teachers work from remote locations to teach and support their students. Other less marked distinctions are noted where relevant in the descriptive sections of this report.

Methods and Limitations

A mixed method approach was employed to address the question of how the cost structures of Maine's virtual charter schools mirror or differ from those of Maine's non-charter public schools. Key informant interviews, document analysis, and staffing analysis were conducted for each school. Notably, because Maine Virtual Academy is currently in its first year of operations, a quantitative review of expenditure data was only possible for Maine Connections Academy. Accordingly, much of the qualitative analysis also focused primarily on the experiences of Maine Connections Academy.

Interviews with key leadership and staff members from each school were conducted to provide background and context for each school's structure, operations and finances. Two in-person interviews were held with Maine Connections Academy leadership. The first interview included the school's Board Chair, Head of School, and CFO. The purpose of this initial interview was to provide Maine Connections Academy staff and leadership with an overview of the study, to review Maine Connections Academy's mission, structure and history, to collaboratively identify appropriate sources of financial data and a schedule for release of data, and to plan for follow up interview(s). A follow up interview with the Head of School focused on several key areas of Maine Connections Academy's financial, academic and administrative operations, and included informal observations and conversations with MCA teachers. Subsequent communications between MEPRI project staff and both the Head of School and CFO occurred to clarify or add detail to information gleaned in interviews and from the schools' financial and staffing data. One interview was conducted with Maine Virtual Academy leadership and staff. This interview included the Acting Head of School, Board President, and CFO. This interview focused on key areas of Maine Virtual Academy's school structure and its financial, academic and administrative operations.

Documents related to both schools' operations and finances were also reviewed, including the schools' applications to the Maine Charter School Commission and the charter contracts between each school and the State of Maine Department of Education (DOE). The Education Products and Services Agreement between Maine Connections Academy and Connections Academy of Maine LLC and between Maine Virtual Academy and K12 Virtual Schools LLC were also reviewed. In addition, the Maine Charter School 2014-2015 Annual Report to the Commissioner of the Department of Education provided further context and background related to Maine Connections Academy's first year of operations.

Review and analysis of staffing, budget and expenditure data was conducted where possible and appropriate. Financial and staffing data sources are outlined in Table 2. Staff to student ratios were calculated for both schools for 2015-2016, and also for Maine Connections Academy for 2014-2015. Staff to student ratio calculations relied on DOE school staffing data and average yearly student counts. An average regional salary adjustment figure was also calculated for Maine Connections Academy for the 2015-2016 school year only, as regional adjustment data was not yet available for Maine Virtual Academy, and not available for Maine Connections Academy for 2014-2015 school year.

As noted previously, Maine Virtual Academy was in its first year of operations during the study period, therefore a full year of expenditure data was not available and expenditure data analysis could not be conducted. Expenditure analysis of Maine Connections Academy relied primarily on the school's 2014-2015 end of year expenditure data, as this represented the only complete year of data available. Where possible and applicable, Maine Connections Academy's 2014-2015 per-pupil expenditures were calculated using the Maine DOE Model Chart of Accounts for specific expense line items anticipated to be more or less costly in the virtual setting. These per-pupil expenses were then compared to the 2014-2015 EPS per-pupil allocation amounts where possible. Additional comparisons were made to prior EPS component reviews where feasible and relevant.

Table 1. Data sources for staffing and financial analysis

Data Element	Source	Available for Maine Connections Academy	Available for Maine Virtual Academy
School expenditures FY2014-2015	school	Y	N (school not in operation)
Staffing report FY2014-2015	Maine DOE	Y	N (school not in operation)
Staffing report FY2015-2016	Maine DOE	Y	Y
ED279 Report FY 2014-2015	Maine DOE	N	N (school not in operation)
ED279 Report FY 2015-2016	Maine DOE	Y	Y (limited)
School budget FY 2015-2016	Maine charter school commission	Y	Y
Application to Maine Charter School Commission	Maine charter school commission	Y	Y
Contract with Maine Charter School Commission	Maine charter school commission	Y	Y
EMO contract	school	Y	Y
Building/office space lease	school	Y	Not requested

The current study has a number of inherent limitations. As previously discussed, both of Maine's virtual charter schools are newly established in the state. Minimal financial data on either school was available for review and analysis. No expenditure analysis could be conducted for Maine Virtual Academy, and analysis could only be conducted on Maine Connections Academy's initial year of operations (SY2014-2015). Expenditures from Maine Connections Academy's first year of operations may not provide an appropriate base to assess their ongoing or future costs, as the school was not yet operating at its full projected enrollment. Furthermore, their spending amounts and patterns may change in subsequent years as they change their programming and supports in response to their initial experiences with students.

The structure of the Education Products and Services Agreements between the schools and their EMOs, which include several "bundled" fees, also present a challenge in determining the schools' actual per-pupil expenses in specific areas. As noted above, our per-pupil expense calculations relied on coding from the Maine DOE Model Chart of Accounts to identify spending in several key expense areas. Large bundled fees paid to a virtual school's EMO may be accounted for in one category (e.g. "purchased professional services") but may actually include number of expense items that might otherwise be accounted separately by a school operating

without an EMO contract or similar school structure. Given this, the SY2014-2015 per-pupil spending calculations included for Maine Connections Academy should be viewed with caution, as these calculations may not fully reflect Maine Connections Academy's spending in the areas under discussion. For the same reason, comparisons with EPS funding allocations should also be interpreted with caution. These caveats are detailed more explicitly within the data sections for each spending component.

As both schools continue to establish themselves, their student bodies, operations and staffing are certain to experience further flux and change, making it difficult to draw broad generalizations on Maine virtual charter school costs and expenses from our present findings. However, this preliminary analysis does provide some useful guidance about the most significant cost differences between virtual and bricks and mortar schools, and points to areas for further study.

Maine Virtual School Profiles

Maine Connections Academy (MCA)

Maine Connections Academy (MCA) was established in May, 2014 and began its first school year in September, 2014. During the 2014-2015 school year, the average enrollment was 260.5 students; in 2015-2016, it was 377.5 students. MCA's enrollment is capped at 390 students until SY2018-19 unless otherwise approved by the Maine Charter School Commission. MCA's base of operations is located in South Portland, but enrolled students reside throughout the state. In the 2015-2016 school year, students' sending school districts ranged from Kittery Public Schools to RSU 39 in Caribou. The mission of MCA, as outlined in its mission statement, is "to maximize learner-centered instruction and effectively leverage 21st century education resources to provide a high-quality education to students in grades 7–12 throughout the state who need expanded educational options." (Maine Connections Academy, n.d.).

MCA partners with Connections Education for the management of its education program. Connections Education is a national provider of "virtual education solutions" for students in grade K–12 (Connections Education website). Connections Academy is the online learning platform Connection Education provides to its virtual public school partners

throughout the United States. Connections Education was incorporated in 2001 and is based in Baltimore, Maryland. As of 2011, Connections Education LLC operates as a subsidiary of Pearson plc, a global education and media company (Bloomberg, 2016).

Maine Virtual Academy (MEVA)

Maine Virtual Academy (MEVA) was established in February, 2015 and began serving students in September, 2015. During the 2015-2016 school year, MEVA's average enrollment was 266 students. MEVA's enrollment is capped at 390 students until AY2019-20 unless otherwise approved by the Maine Charter School Commission According to MEVA's application to the Maine Charter School Commission, MEVA's mission is "to develop each student's full potential with learner-centered instruction, research-based curriculum and educational tools and resources to provide a high quality learning experience for grade 7-12 students who are in need of alternative educational options" (Maine Learning Innovations, 2014).

MEVA partners with K12 Education Inc. for the management of its education program. K12 Education Inc.'s corporate profile describes the company as "a technology-based education company that prides itself on driving innovation and advancing the quality of education by delivering state-of-the-art, digital learning platforms and technology to students and school districts across the globe. With nearly a half-billion dollars invested in developing award winning curriculum, K12 specializes in the creation of proprietary software, learning systems and educational services designed to facilitate individualized learning on a highly scalable basis for students in kindergarten through 12th grade" (K12 Inc., n.d.). K12 Inc. was founded in 2000 and is headquartered in Herndon, Virginia.

Data Analysis & Findings

Overall Allocation and Spending

The most recent year for which final expenditure data are available is 2014-15, when Maine Connections Academy was in its first year of operation. Maine Connections Academy (MCA) was allocated a total of $2,191,586.60 from the state for an expected enrollment of 270 students in FY15. This amounts to $8,117 per pupil. In comparison, total state Essential

Programs and Services (EPS) allocations for all public non-charter districts were $1,986,469,586 for 182,101 students, or $10,909 per pupil.

MCA spent a total of $2,154,285.72 on its 260.5 students (October and April average) in 2014-15, or $8,270 per attending pupil. Overall, schools in Maine spent a total of $12,552 per pupil. Table 2 breaks that spending down by the state's standardized budget categories, and also provides spending in each budget category as a percentage of overall spending for both MCA and the state.

Table 2. Per Pupil Spending in Maine compared to Maine Connections Academy by State Budget Category

	Overall State Spending		**Maine Connections Academy**	
	Maine Per Pupil Spending	% of Total Spending in Category	MCA Per Pupil Spending	% of Total Spending in Category
Regular Instruction	**$ 5,127**	40.9%	**$ 3,055**	37.0%
Special Education	**$ 1,953**	15.6%	**$ 1,345**	16.3%
CTE	**$ 255**	2.0%	**$ 0**	0.0%
Other Instruction	**$ 269**	2.1%	**$ 11**	0.1%
Student & Staff Support	**$ 1,005**	8.0%	**$ 1,779**	21.5%
System Administration	**$ 370**	3.0%	**$ 646**	7.8%
School Administration	**$ 666**	5.3%	**$ 1,088**	13.2%
Transportation	**$ 690**	5.5%	**	**
Operation & Maintenance	**$ 1,409**	11.2%	**$ 345**	4.2%
Debt Service	**$ 756**	6.0%	**$ 0**	0.0%
All Other	**$ 51**	0.4%	**$ 0**	0.0%
Total	**$ 12,551**	100%	**$ 8,270**	100%
Total State Spending Except Transportation and Debt Service	**$ 11,105**	88.5%	**$ 8,270**	100%

** *Virtual Charter schools are not provided with funding for transportation in their EPS allocations. MCA had transportation-related expenditures of $1,050 related to co-and extra-curricular activities. These funds are included within "other instruction" expenditures per the accounting rules in Maine's budget categorization system.*

From the table we can see that MCA spent less overall than the state average. They spent less per student on regular instruction, special education, Career and Technical Education

(CTE), other instruction, operation and maintenance of physical plant, and other spending. MCA spent above the state average per pupil amount on student and staff support and administration (both system and school).

While MCA had a smaller budget allocation overall than the statewide average, they spent a similar proportion of their funds (using an arbitrary standard of a difference less than 5%) in regular instruction, special education, CTE, other instruction, system administration, and all other spending. They were more than 5% higher in the proportion of their budget spent in student and staff support and school administration, and were 5% of their budget lower in proportional spending on transportation, operation and maintenance of physical plant, and debt service. Because MCA does not receive state funds for student transportation and has no approved debt service, a state total for per pupil spending minus student transportation and debt service is also provided in Table 2 for a different, and possibly more meaningful, comparison of total per pupil spending ($11,105 per pupil overall for the state compared to $8,270 per MCA pupil).

It is noteworthy that the MCA data was based on their first year of operation with less than their future intended capacity of students. In the current 2015-16 academic year, MCA did not report additional administrative staff yet had a sizeable increase in students (from 260 in 2014 to 390 in the October 2015 student count). Enrollments are expected to reach up to 450 students in their third year of operation in 2016-17. It is likely that the per-pupil amounts for their second and third year of operation may differ markedly from the data in Table 2. Because the final expenditures for FY16 are not yet complete, this analysis should be updated when both MCA and Maine Virtual Academy (MEVA) are operating at their intended full capacity.

Comparative Costs of School Program Components

This report section provides analysis of the costs of operating a virtual school, with separate categories for different types of expenditures. These categories are generally in alignment with components within the Essential Programs and Services funding model. Each element includes: a) a description of how the component functions in or translates to the virtual school setting, b) a summary of what is known about the costs of providing that service in a virtual setting (using qualitative interview data and/or available expenditure or budget

information where available), and c) an overall assessment of whether the component is more expensive per student, approximately the same cost, or less expensive in a virtual setting. Some elements were found to be indeterminate based on the currently available data. A summary table at the end of the section provides the relative cost findings.

Membership: Enrollment and Attendance

Description

The EPS formula does not have a specific component for managing student enrollment and attendance. In traditional schools, the function is carried out by various school and district staff, and is supported by student information systems. However, accurate enrollment counts are a critical part of the overall formula as allocations are based on the number of pupils. Also, given the attention paid to monitoring student attendance and enrollment in virtual charter schools, this may be an area where the needs of virtual schools differ from the assumptions of the EPS model for traditional schools. Thus this topic is described generally in this section, as well as in the system administration component described later in this report.

The State of Maine defines a school day as a 5-hour day in which both students and teachers are present. In a virtual school setting, the pattern of a school day and school week is more flexible, but the number of required hours remains the same.

For MCA, 100% attendance is an average of 50 hours over a 2-week period. These hours may take place at any time of the day or week in accordance with the student's needs. MCA tracks "actual attendance", i.e. the actual hours a student is present and working. Each MCA student's learning coach (typically a parent) confirms the student's hours via Connections Education's educational management system, Connexus. The MCA teacher verifies the student hours in Connexus.

There are three levels of attendance status: on track, approaching alarm, and alarm. After three days of non-attendance, the student's homeroom teacher will reach out to the student and learning coach. If a teacher receives two non-responses from this outreach, then MCA administrative staff assists in contacting the family. If there is still no response in 7-10 days, then there is a truancy process. The school will reach out to the family and initiate a "comprehensive investigation" of what is preventing the student from attending. This process

can include a number of components, including a meeting with the family and student services, a home visit, and/or sending law enforcement for a well-being check at the student's home. MCA covers mileage and other travel costs for staff that travel to students' homes for an in-person visit, but because students may live anywhere in the state, sometimes this is not feasible. In other cases a family may be unreceptive to having a MCA staff member visit. In those cases, the school will reach out to local law enforcement or to a school resource officer in the student's local district to check on the student.

In an interview, MCA's Head of School acknowledged that attendance is a challenge for some students. The virtual format may attract some students who were disengaged in their prior schooling and perceive that virtual schooling will be "easier" because of its flexibility in time of day and week. However, the format may require *more* self-discipline than bricks and mortar settings, where teachers and peers may provide added motivation once the student gets to the school building. For disengaged students, the virtual learning format may exacerbate poor attendance issues. When the virtual schooling format is not a good fit for a student, it is often a time-intensive process for staff to contact the student, identify the problem, and work towards an appropriate educational environment.

Because of this, the MCA staff described the need for ample communication with prospective students and their learning coaches during the enrollment (admission) process. The school seeks to provide a realistic sense of the virtual learning requirements prior to application so that students can self-assess whether the format will suit their needs and wants. This was described as a substantive challenge for the school. One idea proposed in the school's first annual report was to develop a realistic preview experience that prospective students could try during the summer before enrollment, so that students wishing to switch back to their local school district could do so before the beginning of the school year—thus preventing disruptive transitions in September for both the departing students and those newly joining the virtual school from the waitlist. The FY15 enrollment data for MCA are provided in Table 3.

Table 3. Maine Connections Academy Student Enrollment, 2014-15

	Grades 6-8	Grades 9-12	Total
Start of year (9/2/14)	114	171	285
October 1 Count (2014)	101	155	256
April 1 Count (2015)	102	163	265
Annual EPS average	101.5	159	**260.5**

In 2015-16, the student enrollment grew to 378 total students, and is projected in the initial charter application to grow up to 450 students in 2016-17. Maine Virtual Academy had a projected enrollment of 281 in their 2015-16 EPS allocation. MEVA reported 281 total students at their October 1, 2015 reporting date, and 251 on April 1, 2016.

Cost Analysis

The costs of the processes of enrolling and monitoring student enrollment include staff time for meeting with prospective students and their learning coaches, bi-weekly monitoring of student attendance for enrolled students, and travel reimbursement for staff conducting home visits. MCA pays a fee of $40 for each student that enrolls to cover the costs of registration and account set-up, as well as the Connexus system's attendance tracking functions (including a Truancy View that supports monitoring efforts). The actual costs of enrollment and monitoring cannot be accurately estimated because the staff time commitments have not been measured, and travel costs for truancy visits are not isolated from other travel costs in expenditure reporting. Moreover, comparison data are limited as brick and mortar schools also do not report these expenses specifically.

Relative cost

The EPS formula does not provide a specific allocation for enrollment management, thus a comparison to EPS is not relevant. However, this is an area where a cost model developed specifically for virtual schools might differ from EPS. The cost of enrolling a virtual student is likely higher than for traditional schools, although comparable data is not available. Substantial staff time is spent working with prospective students to ensure they have had the opportunity to understand the different instructional model and reflect on its suitability for their individual needs and preferences. Also, the per-student registration fee of $40 is an additional cost that

does not have a direct analog in traditional schools, although traditional schools do require staff time to perform some of the same intake and setup functions.

The attendance monitoring cost per truant pupil is indeterminate, but possibly higher than traditional schools. The ongoing attendance data monitoring process involves teaching staff time as well as administrator time, and the cost of home visits is likely higher on average than similar efforts in traditional schools due to the distances involved. However, without knowing the estimated costs, this cannot be established. Moreover, the major cost driver is the *proportion* of students who are chronically absent and require follow-up. If this proportion is systematically higher or lower in virtual schools than traditional schools, this would have intrinsic cost implications. This function may merit additional data collection and analysis in future work to analyze virtual schooling costs.

Staff (teacher, other professionals) ratios

Description

Discussion of student to teacher ratios in Maine's virtual schools must first begin with a general description of the virtual instructional model. These descriptions are based on the practices in place at MCA.

All charter schools in Maine, both virtual and non-virtual, are required to employ qualified teachers per MRS Title 20-A, Chapter 112 §2412, which states that "all full-time teachers in a public charter school must either hold an appropriate teaching certificate or become certified within 3 years of the date they are hired, except for those with an advanced degree, professional certification or unique expertise or experience in the curricular area in which they teach." MCA teachers are contracted for 200 teaching days. MCA teachers work from their South Portland offices and typically during normal school/business hours.

The MCA instructional model is asynchronous with synchronous support. MCA teachers "schedule at least one weekly live synchronous interactive contact for all courses in middle school and all core course for high school students each week" using Connections Education's proprietary LiveLesson system, which may also include one-on-one or small group instruction (MCA charter application, p. 96). Teachers may additionally be in frequent contact with students and "learning coaches"/parents via phone, email, or videoconferencing to answer

questions, provide additional instruction, assess student understanding, etc. Subject teachers are responsible for instruction, grading and monitoring the progress of students through the course content. Advisory teachers are additionally responsible for developing "personalized learning plans" with their assigned students and their leaning coaches, and for monitoring those students' overall progress, including attendance and participation. Teachers make contact with learning coaches at least once every two weeks for activities including checking in on lessons, conducting assessments, verifying attendance, and general communication to support individual students.

To calculate student to staff ratios, we used the average number of students enrolled during a given school year and the sum of full-time-equivalent (FTE) hours for each staff category. In considering ratios for each category, it is important to note that it is evident that the nature of teaching, counseling and administration in a virtual school is somewhat different than performing these roles face-to-face in a traditional school setting. However, there is no established evidence base to suggest the ideal staff to student ratios for virtual schools. When the EPS formula was developed for Maine, researchers were able to draw upon both national literature as well as Maine data for high performing schools to suggest appropriate staff to student ratios for brick and mortar schools. No such data yet exists to suggest the optimal ratios for high-quality virtual programs.

Cost Analysis

In the 2014-2015 school year, MCA directly employed 6.25 FTE teaching staff, with a student to core teacher ratio of 41.7:1. In the 2015-2016 school year MCA's teaching staff grew to 10.5 FTE, as did the student population (to 378), lowering the student to core teacher ratio to 36.0:1. In both years, the core teacher ratios were higher than the 16:1 student to teacher ratio for grades 6–8 and the 15:1 ratio for grades 9–12 in the EPS formula. However, these MCA ratios **do not include** all teachers. In 2014-15, 172 MCA students also participated in courses taught by teachers who are staff of the International Connections Academy (iNaCA) and not employed directly by MCA. The number of FTE hours contributed by these Connections Academy teachers was reported by iNaCA staff to be 1.03 FTE teachers in 2015-16; the FTE for 2014-15 was not readily available. If 1.03 teachers are added to the FTE count in each year

(using the FY16 contribution of iNaCA teachers to estimate that in FY15), the revised estimates are a teacher ratio of 35.8:1 in FY15 and 32.8:1 in FY2016.

According to MCA's Head of School, the electives and other specialized courses taught by iNaCA teachers are very popular among students. It therefore likely that iNaCA teachers will continue to contribute significantly to MCA's true FTE teacher count in future years. These estimates should be updated in future analyses and should be calculated for both virtual charter schools.

According to October 2015 staff data reporting, Maine Virtual Academy (MEVA) employed 8 classroom teachers for its 266 students (annual average) in its first year of operation, for a 33.3: 1 student to staff ratio). Like MCA, MEVA students also pursue elective courses from teachers other than those directly employed by the school. Unlike MCA, MEVA described that most of their students' elective courses were from Maine-based distance course offerings and not from K12, Inc. MEVA students participated in the state AP4ALL program as well as the early-college options from University of Maine at Fort Kent through the Rural U initiative. Participation data and teacher FTE equivalents were not readily available in the middle of the academic year, and the true teacher to student ratio was thus indeterminate.

While the unadjusted teacher to student ratio at MCA was higher than the EPS formula, MCA's guidance staff to student ratio was substantially lower than the EPS allocation in both school years. MCA employed one full-time guidance counselor to serve students in 2014-2015, for a 261:1 student to counselor ratio, and two full-time guidance counselors in 2015-16 for a ratio of 189:1. These overall ratios were at or below the EPS ratios of 350:1 for 6 – 8th grade students and 250:1 for 9-12th grade students. According to the Head of School, this lower ratio is very much by design and in response to the time-intensive nature of providing support to students geographically dispersed across the state. MEVA employed one full time Director of Guidance in FY2016, for a 266:1 student ratio. This is comparable to the ratio at MCA during its first year and below the EPS ratios.

In the 2015-2016 school year, MCA employed one FTE clerical staff person with a student to clerical staff ratio of 378:1 students, falling significantly above the EPS allocation of 1 clerical staff per 200 students for all grade levels. Clerical staff were not reported in the October

1 state staffing record data collection for the 2014-2015 school year, however according to the school's expenditure data and the Head of School, MCA did employ a full-time clerical staff person during that year for a 261:1 ratio. MEVA employed one Administrative Assistant for a 266:1 clerical staff ratio, similar to MCA's first year and above the EPS allocation.

MCA employed one School Administrator during both the 2014-15 and 2015-16 school year. In 2014-2015 MCA's school administrator to student ratio was 261:1 and in 2015-2016 it was 378:1. While MCA's 2014-2015 administrator to student ratio was below the EPS ratio of 1:305 (6-8) / 1:315 (9-12), increased enrollment in its second year of operation brought MCA's ratio to above the EPS rate in 2015-16. MEVA employed one Director of Operations (presumed to be a school administration role), for a student ratio of 266:1. MEVA also employed one Superintendent in FY2016. The Superintendent position is not included in staff ratios as EPS allocates separate funds for system administration.

Table 4. Virtual School Student to Staff Ratios Compared to EPS Assumptions

	MCA Year 1	MEVA Year 1	MCA Year 2	EPS 6-8	EPS 9-12	Virtual Charter Ratio Comparison to EPS
Teachers*	35.9 : 1	33.3 : 1	32.9 : 1	16 : 1	15 : 1	Higher
Guidance	261 : 1	266 : 1	189 : 1	350 : 1	250 : 1	Lower
Clerical	261 : 1	266 : 1	378: 1	200 : 1	200 : 1	Higher
School Admin	261 : 1	266 : 1	378: 1	305 : 1	315 : 1	Similar

** Teacher counts are high estimates as they do not account for elective course teachers*

It is notable that the EPS model deals with staffing *ratios*. The total *costs* incurred for staff are a large proportion of overall school spending, and the student to staff ratios are an important factor in understanding schools' spending. However, additional factors such as teacher salary levels, experience levels, and related costs also matter. A separate section below compiles together information across several separate components to address staff *cost* implications.

Relative Ratios

The virtual charter schools had higher student to teacher ratios and clerical ratios than the EPS model for traditional schools. They had lower ratios for guidance counselors. The school administrator ratios were approximately similar to EPS allocations when averaged over the three data points.

Employee Benefits

Description

Maine charter school staff are not eligible to participate in the Maine state employee retirement system, and do not participate in collective bargaining processes that typically impact the benefits packages of staff employed in traditional public schools in Maine. Connections Education (the EMO) manages the benefits package of the staff at MCA, per the approval of the MCA Governing Board and contract between MCA and Connections Education. According to the contract fee schedule, MCA pays Connections Education 18% "per annual actual gross wages and bonus accrual for administration and teachers" for employee benefits. Such benefits include, medical, dental, vision, flexible spending accounts, heath savings accounts, disability coverage, employee assistance program, retirement plan, tuition reimbursement, financial aid for adoption as well as several voluntary benefit options. School staff are eligible to participate in an employer sponsored retirement plan which includes a match of employee contributions; the employer match is included in the 18% benefits rate (at no additional charge to MCA).

In addition, MCA pays 9% for payroll taxes, including the 6.2% employer share of Social Security contributions. Non-charter school districts contribute 2.65% of teacher salaries to the Maine State Retirement system.

Cost Analysis

The 18% contribution to Connections Education plus the 9% in payroll taxes total 27% of employee salaries spent on benefits. This rate is verified in the FY15 expenditure data detailed in Table 5.

Table 5. FY2015 Benefit Costs at Maine Connections Academy

EPS staffing category	EPS benefit %	MCA staffing category FTE (FY15)	MCA salary expenditures (sum of category)	MCA benefit expenditures (health benefits, 401K, misc. benefits and taxes)	MCAs benefits as a % of salary
Teachers, guidance, library, health	19	6.25 FTE	$290,080.06	$77,457.00	27%
Ed techs and library techs	36	n/a	n/a	n/a	--
Clerical	29	1.0FTE	$23,908.83	$6,455.39	27%
Administrators	14	1.0 FTE	$83,953.96	$22,667.57	27%

The EPS allocation for teacher benefits is 19%, which is lower than the 27% paid by MCA.

The relative costs of MCA benefits compared to brick and mortar school districts are indeterminate based on readily available data. Because retirement plan contributions are handled differently in charter and non-charter schools, direct comparisons are difficult. The actual benefit expenditures for non-charter public schools are not compiled annually, particularly on a salary percentage basis. That comparison may be possible in the next scheduled MEPRI review of the benefits EPS component in 2017-18. Also, details on the MCA and MEVA benefits packages, including retirement benefits, were not available to compare whether they are of similar quality and value to those received by the average public non-charter school teacher.

Teachers in the Maine State Retirement system pay 7.65% of their gross income towards their pension benefits, and MCA teachers pay 6.2% for social security taxes. Neither of these expenses are included in the EPS model as they are borne by the employees, not the school district or state.

Relative Costs

The benefits costs for MCA are higher than the EPS allocation. Costs compared to traditional schools are indeterminate.

Regional salary adjustments

In the EPS formula, districts receive an adjustment in their EPS per pupil rate based on a regional salary index; regions with higher teacher salaries receive more per pupil than those with lower salary costs (after factoring in relative teacher experience and education level). This is intended to recognize the differences in labor markets in different parts of the state which affect teacher salaries.

MCA is physically located in South Portland and draws its staff from within that geographic area. However, because its funding is based on the EPS rates from each student's district of residence, its true regional salary "adjustment" depends on where its students live within the state. This is true of all charter schools, but particularly noteworthy for virtual charters with their large geographic spread. While the FY2016 school year regional salary adjustment for South Portland was 1.06, MCA received an effective regional adjustment of 1.0 based on the average regional adjustment for its students' sending districts. Each school year the average salary adjustment for MCA will necessarily fluctuate depending on its student population, however MCA would need to enroll *many* more students from districts with higher regional adjustment figures, or drastically shift its enrollment patterns, to raise its average to align with South Portland's 1.06 adjustment amount. Given the apparent geographic diversity of MCA's current student population and the existing cap on total enrollment, this seems improbable.

The FY2016 EPS allocation for MEVA was based on estimated students, and thus it was not possible to calculate an effective regional adjustment based on the sending districts of their 2015-16 students. Its physical location is in Augusta where the regional adjustment index is 0.95. Thus the impact of the difference between the effective regional adjustment (based on students' sending districts) and Augusta is indeterminate. The regional draw from MEVA is understood to consist of more northern regions, where the adjustment factors are generally lower than in the southern regions of the state. Thus it is possible that MEVA may also face the challenge of a lower effective index than they would receive if based on their physical location.

Relative Cost

The impact of the disconnect between the regional salary adjustment that virtual charters effectively receive compared to the region where they are located depends on both their physical location and their students' geographic locations. In FY2015 MCA received a lower adjustment than it would have received for its physical location if it were a non-charter school.

Staff Costs: Overall Implications

In the 2015-16 school year, the highest paid MCA teacher received a base salary of $45,805. The years of experience of MCA's teaching staff ranged from 2 to 40 years. MCA teachers may also receive salary bonuses based on performance benchmarks detailed in their contracts, and may receive supplemental stipends for taking on additional school responsibilities. MEVA teachers were less experienced on average, with a range of 0 to 7 years of prior experience. All MEVA teachers were reported to have the same salary of $34,000, consistent with their projected budget.

The higher benefits costs and the regional adjustment mismatch create costs for MCA that were higher than EPS. The substantially higher student-to-teacher ratios work in the opposite direction to lower per-pupil staff costs. However, the lower-than-EPS student ratios for administration and guidance staff partially offset the higher teacher ratios. Given the limited nature of the available data, the relative overall staff costs must conservatively be assessed as indeterminate. Additional data are needed to evaluate staff costs relative to the EPS model. Moreover, the fact that the reported data are based on only one virtual school in its first year of operation is acutely felt; the staffing ratios may or may not be exemplary, and both staffing ratios and salaries may fluctuate.

Substitute teachers

Description

Virtual schools' need for substitute teachers differs from traditional public schools. MCA teachers provide a mix of "live" and asynchronous instruction, and have the ability to schedule

live meetings around other commitments. Thus there is less need for school day teacher coverage for activities such as professional development or shared meeting time.

Costs Analysis

In 2014-2015, MCA expenditures for substitute teachers were $12.80 per pupil. The EPS allocation was $39 per pupil.

Relative Costs

Virtual charter schools spend less than EPS allocation amount for substitute teachers.

Supplies and equipment

Description

MCA's model suggests that virtual education involves more substantial expenditures on items and services that are considered educational supplies and equipment. In the case of MCA, the bulk of these expenses are governed by its contract with the Connections Education, as approved by the MCA Governing Board. According to the fee schedule of the Education Products and Services Agreement between MCA and Connections Academy of Maine LLC, MCA pays Connections Academy a per average enrolled student charge for "tangible and intangible instructional materials." This fee is additionally subject to adjustments based on changes in the percent of student turnover. According to MCA, "tangible and intangible instructional materials" encompasses the virtual instructional program and includes interactive online course materials, textbooks (including digital textbooks), novels, workbooks, science kits and art kits, math manipulatives, lesson plans, test preparation materials, and other proprietary and third party licensed online content. Tangible course supplies are mailed to each student, and made available for their use throughout the academic school year.

Maine Virtual Academy's funding system is different, and pays a course fee per student per each enrolled course to K12, Inc. The course fees vary based on the types of material provided for the course, i.e. science courses with relatively expensive lab kits cost more than other types of courses.

Costs Analysis

MCA's 2014-2015 per pupil spending on supplies and equipment was $1,465 per student in grades 6-8 and $1,496 per student in grades 9-12. This is substantially more than the EPS cost model, which provides $355 per 6-8 student and $490.00 per 9-12 student. In the FY2010 review of the supplies and equipment EPS component, MEPRI found that traditional schools spent $172 per K-8 student and $265 per 9-12 student (MEPRI, 2010).

Relative Costs

Virtual school costs for supplies and equipment are higher than the per-pupil EPS allocation.

Professional development

Description

All MCA teaching staff must participate in Connections Education professional development modules during every year of employment. New teachers receive an initial orientation training prior to the start of the new school year, as well as training from the Connections Education on the various elements of the instructional system. The newly-hired teachers at MCA typically have prior teaching experience in traditional settings but are new to virtual instruction. This initial training was described by the Head of School as critical for teachers facing a "steep learning curve". In subsequent years of teaching, professional development topics and focus areas for MCA teachers are differentiated depending on the teacher's employment year and professional needs. Staff are also eligible to participate in relevant professional development opportunities outside of the modules provided by Connections Education. Additionally, MCA provides a stipend for two teacher leaders who facilitate the professional development program for teachers.

Cost analysis

The costs for the training and support provided by Connections Education are included in the licensing fees, and thus specific costs are not available. MCA spent an additional $414 on professional development outside of those opportunities.

Relative Costs

The relative costs of professional development are indeterminate as detailed expenditure data are not available.

Co/extra-curricular activities

Co- and extra-curricular activities in the traditional public school setting may take a variety of forms, including athletic teams and school sponsored academic or service clubs. Based on local superintendent approval, MCA students can participate in their sending school districts' sports teams. In these instances, the Head of School and the local superintendent develop a cost-sharing agreement for the student's participation. There is no set formula, so cost-sharing can range depending on the home district.

Connections Education also offers over two dozen virtual student organizations and clubs. These opportunities are national, providing an opportunity for Maine students to connect with peers across the country with their specific interests. Costs for participation are included in the Connections Education licensing fee. Maine Connections Academy can also create additional opportunities beyond the national offerings to suit students' needs and interests. MCA students have participated in state math competitions and the state spelling bee. Participation numbers for co- and extra-curricular activities were not readily available.

Cost Analysis

In FY2015, MCA spent $1.27 per 6-8 student, and $17.47 per 9-12 student on costs that were identifiable as co- or extra-curricular. Approximately $1,050 of these expenditures were for transportation of students. This is an underestimate of the full expenses, as the costs for Connections Education student clubs and organizations are not detailed within annual licensing fees. By comparison, the FY15 EPS allocation was $36.00 per 6-8 student and $117 per 9-12 student. In the last EPS component review in FY2010, Maine districts spent $30 per 6-8 student and $168 per 9-12 student on these costs (MEPRI, 2010).

Relative Costs

The costs for co- and extra-curricular education activities are lower per pupil than EPS allocations based on the FY2015 expenditures. However, because student participation levels in

activities and clubs was not readily available, and costs for these programs are included in the annual license, this finding is not definitive.

System administration

Maine's charter schools also function, to an extent, as their own school districts, as the heads of school are responsible for the state and federal reporting functions normally performed by a school district superintendent. Thus MCA has higher system administration needs than would be expected for a traditional secondary school.

MCA's system administration expenditures include items with costs determined by the Education Products and Services Agreement between MCA and Connections Academy of Maine LLC. Some examples include:

- Marketing services: 1.0% of revenue from all government sources excluding special education
- Treasury services: 1.5% of revenue from all government sources excluding special education
- Enrollment management: $40.00 per student (any student who enrolls at any time during the school year), which includes the attendance monitoring system.

Cost Analysis

MCA spent $ 646 per student on system administration costs in FY2015. This is higher than the EPS allocation of $ 225 per student. However, as the EPS allocation was reduced by half in 2009 as part of Maine's policies to promote school district reorganization, the vast majority of districts do exceed the EPS allocation amount. In MEPRI's recent review of the System Administration cost component in 2016, 95% of schools spent more than the EPS allocation for system administration. The average FY2015 per-pupil administrative cost for districts with less than 300 students was $891, and was $515 for districts with 300 to 1000 students (MEPRI, 2016). With 261 students in FY15, MCA's per pupil costs are comparable.

Relative Costs

MCA system administration costs are approximately the same as public school districts of similar size. As with most Maine districts, their spending is higher than the EPS allocation.

Operation and Maintenance of Physical Plant

Description

Virtual schools require far less physical space to operate compared to traditional schools, as classrooms, gymnasiums, libraries and cafeterias are not necessary for the day-to-day functions of a virtual school. Both of Maine's virtual schools are located in commercial office suites. The smaller and less diverse physical plant of Maine's virtual schools are less costly to maintain than traditional schools on a per-pupil basis.

Cost Analysis

During the 2014-2015 school year, MCA paid $35,497 in rent for its current location in South Portland with 3,227 square feet of space. While leased space is ordinarily not included in operation and maintenance accounting coding, their lease cost is included in this category because the virtual schools do not own school buildings and thus do not qualify for approved school construction debt service (the typical EPS mechanism for funding the school building space). MCA spent a total of $89,938 ($345.25 per student) on operations and maintenance when this lease cost is included. The EPS allocations were $1,039.00 per K-8 student and $1,235.00 per high school student. According to the last EPS component review in 2011, 21% of school districts spent less than their 2010 EPS allocation on their secondary school operations and maintenance and 17% spent less on their elementary school operations and maintenance (MEPRI, 2011).

Relative Costs

Virtual charter school facilities cost less to operate and maintain than the EPS allocation.

Students with Limited English Proficiency

Description

MCA's Head of School reports that the number of students with limited English language proficiency (LEP) enrolled is small, but growing. To meet the needs of these students in the current academic year, MCA has designated a teacher to serve as their ELL teacher and coordinator. The teacher received specialized training, and she receives a stipend to cover her additional work in this area. The primary means of supporting English Language Learners is to

place them in courses that are at their level of comprehension, i.e. English Language Arts course options intended for lower grade levels, combined with supplemental support from teachers in all courses.

There were no students reported as LEP in the October 1, 2014 student data reporting process, when MCA was just beginning its first year of operations. MCA did not report any LEP expenditures in FY2015. Without these data, the relative costs of meeting the needs of LEP students in the virtual setting is indeterminate. Schools that do not report LEP students do not receive additional funding for their support in the EPS funding system. MCA was projected in their FY16 EPS allocation to serve five LEP students in the current academic year.

Relative Cost

The relative cost of educating English Language learners in a virtual school compared to the EPS model or compared to traditional schools is indeterminate.

Economically Disadvantaged Students

The EPS cost component for economically disadvantaged students is difficult to quantify for all school districts. Expenses for educating students who are eligible for free or reduced price lunch are not tallied separately from those for non-poor students, so direct cost comparisons are impossible. Rather, the cost component is intended to recognize that students in poverty sometimes require a variety of additional academic and social supports; the additional weight that is provided to school districts helps them to afford whatever services are most needed in their community setting.

Decades of national and state data establish a link between poverty and lower academic achievement, leading to the presumption that schools with high proportions of poor students will also have more students who need supplemental academic support. In a virtual school as with traditional schools, the instructional model for economically disadvantaged students is no different than for their non-poverty peers. Students who struggle academically—regardless of their financial circumstances—may require more individual teacher time and attention than others. The virtual school blend of synchronous instruction combined with individual and small-group student work appears to provide a ready platform for providing such needed supports. Provided that the students who need it avail themselves of the opportunity, struggling students

may consume a proportionally higher amount of teacher time. Also, students in poverty may be more likely to be chronically absent and require more intensive monitoring and truancy interventions; they may also require additional social supports.

Currently available data is not tracked in such a way that we could support or deny these suppositions about the services provided to economically disadvantaged students in virtual schools. For example, while MCA's student to guidance counselor ratio is lower than the EPS model ratio, there is no concrete evidence that this is because of services provided to economically disadvantaged students. According to MCAs 2015-2016 EPS 279 allocation form, based on FY2015 enrollments the school anticipated serving 63.7 economically disadvantaged K-8 students and 148.7 9-12th grade students in the 2015-2016 school year, totaling 54.5% of MCA's anticipated student body.

Relative Costs

The relative cost of educating economically disadvantaged students in a virtual school compared to the EPS model or compared to traditional schools is indeterminate.

Technology

Description

Instructional technology is a substantial cost driver for Maine's virtual charter schools, as it is the primary delivery platform for all educational activities. Included in the instructional technology budget category are costs for hardware, internet connectivity, IT support, and educational management systems licensing for both students and staff.

MCA has minimum technology requirements for all students enrolled. The school, through its contract with the Connections Education, will provide hardware components (e.g. a personal computer and virtual connectivity accessories) to any MCA student upon request. Alternatively, students may use their own hardware provided it meets the system requirements to run the Connexus educational management system. The Head of School reported that the large majority of students choose to accept the new technology rather than use their own.

Cost Analysis

Instructional technology costs accounted for 18.5% of MCA's 2014-2015 general fund expenditures. The majority of MCA's instructional technology costs are governed by the contract approved by the MCA Governing Board between the school and the Connections Education, and are calculated on a per student (or per staff) basis. MCA paid $240,540 total ($923 per student) on instructional technology hardware and services in 2014-15. This included $44,218 to subsidize internet access for student households, and $129,950 ($499 per student) for student computers. MCA also paid an additional $158,472 in Connexus licensing fees that included student technology services as well as multiple other services (such as teacher professional development as described above). EPS provides $102 per K-8 student and $308 per 9-12 student for instructional technology resources.

Relative Cost

The virtual charter school costs for technology are higher than the EPS per pupil rate.

Student Assessment

Description

Students in Maine's virtual charter schools are required to participate in the same state academic assessments as other students in Maine K-12 public schools. According to the 2015 Annual Report of the Maine Charter School Commission, 92.2% of MCA's 7th, 8th and 11th grade students completed the required Smarter Balanced state assessments in Math and English Language Arts. Students traveled to proctored testing sites at University of Maine System campuses for these assessments, and families were eligible for reimbursement for transportation to testing sites. The exams were proctored by MCA teachers (whose travel costs were also reimbursed).

This policy is similar for MEVA, whose staff traveled to rented space at several testing sites across the state to administer state exams. Because of the limited testing window, some sites were proctored by additional staff that were hired and trained specifically for the purpose. This system of administering state assessments adds to the costs of the assessment process in virtual schools.

Middle school students at MCA also participate in the Longitudinal Evaluation of Academic Programs (LEAP) assessment in both Math and English Language Arts, which is a pre-, mid-, and post- assessment developed by Connections Education. These assessments are given to 7th and 8th grade students in the fall, winter and spring, and are administered via the Connections Education's virtual school platform, Connexus. The cost of LEAP assessment testing is bundled within the "tangible and intangible materials" fee MCA pays to Connections Education. MCA's 9th and 10th grade students take the Scranton Performance Series in the fall and spring semesters.

Cost Analysis

In 2014-2015, MCA spent $ 6.66 per student, compared to the EPS rate of $45 per student. However, the full assessment costs are not included in that amount, as the school specific tests (e.g. LEAP) are rolled into the "tangible and intangible materials" fee. Thus the comparative costs are indeterminate.

Special Education

Description

Like all public schools, Maine's virtual charter schools are required to provide special education services and accommodations to any and all eligible students. Because of their virtual nature, the schools may need to provide services and accommodations both within their virtual educational platforms, as well as facilitate access to in-person services within a student's sending district.

Staff at MCA report that the special education needs at their school represent both extreme ends of the continuum. To provide appropriate accommodations for special education students, MCA reports special education staff "scouts" all around the state for resources in students' home communities (e.g. providers for evaluations, treatment, etc.). MCA's Head of School notes that the process of identifying resources and facilitating students' access to them can be challenging and time consuming because of logistics involved. Mr. Francis also notes that if the school cannot find local resources for a student, the school then must provide for his

or her IEP requirements itself. This can include visiting the student at home, meeting virtually, and/or meeting at the physical school.

In FY2015 MCA reported 29 students with special needs) (11% prevalence), and in FY2016, MCA had 51 students identified as special needs (13.5% of students). The overall special education prevalence rate in the state was 16.3% in FY 2015. The students were identified with a range of disabilities, including Autism, emotional disability, other health impairments, learning disabilities, speech or language impairments, and multiple disabilities. In both years, all students but one were categorized as placed in "regular classroom (80% or more of time)", with one student in a resource room placement. MEVA reported 46 students with special needs in October 2015 (17% prevalence), with 56% of students in "regular classroom" placements, 28% in resource room placements (40% to 80% of time in regular classrooms), and 15% in self-contained classes (less than 40% time in regular classrooms).

MCA employs two full-time special education teachers. They have thus far not employed any Educational Technicians to support special education students, however, the Head of School is exploring the option of employing a virtual Ed Tech. Classroom teachers' roles in working with special education students include skill coaching and helping students cope with barriers. Special education teachers provide more targeted supports specific to each student's IEP.

The MCA Head of School notes that for some of MCA's special education students, the virtual nature of the school is itself an accommodation that supports their needs. These students are helped by the built-in online supports, resources and flexibility that are built into the school's structure.

Costs Analysis

MCA spent $349,477 on special education in FY2015, which was 16% of their total general fund expenses. This equates to $1,345 per total student, or $ 12,050 per special education student in FY2015, on approved special education expenditures. It is not feasible to directly compare to the EPS allocation because the complicated six-part component is highly dependent on a districts' student composition (nature of disabilities and placement settings) as

well as on prior expenditures. However, the per-pupil spending amount was approximately the same as the overall state per-special-ed-pupil spending amount of $12,795 in FY2015.

Relative Costs

From the limited data available, MCA spent approximately the same as other Maine districts on special education expenses on a per-pupil basis.

Transportation

Description

Because virtual schooling does not necessitate physically transporting students to and from school on a daily basis, virtual charter schools in Maine do not receive state funding for student transportation. However, virtual schools may still incur eligible costs for transporting students to receive special education services. The standard state chart of accounts does not appear to have guidance on whether expenses for transporting students to statewide assessment locations should be counted as a transportation cost or an assessment cost.

Analysis

There were no reported transportation expenditures at MCA in FY2015. Since the Head of School described having some costs related to provision of special education services, it is unclear whether the data are completely accurate. It is possible that the special education transportation described by the Head of School occurred in FY2016 but not FY2015, or also possible that the costs were miscoded in another category (such as special education).

Relative Costs

The virtual charter school costs for student transportation are currently about equal to their EPS allocation for transportation, which is zero.

Field Trips & Other Travel

Description

MCA does offer transportation reimbursement to families for school related activities such as school sponsored field trips and required academic assessment testing. Transportation costs associated with academic field trips should be accounted for within regular instruction

costs. It is unclear how costs for travel to participate in statewide academic assessment should be accounted; this is a circumstance not typically encountered in traditional schools and is not addressed in the chart of accounts.

Maine's two virtual schools provide some opportunities for academic field trips. MCA has a "commitment to offer field trips throughout the state" for students' social and academic enrichment, and provides a stipend to staff to facilitate these trips. Field trips typically occur once or twice per month in various locations around the state. Past field trip destinations included art museums, farms, guest attendance in a University of Maine–Orono class, and bowling. If students participate in an MCA coordinated field trip, they are considered to be attending school during the trip. An adult chaperone connected to MCA is present, but this chaperone may be a volunteer "community coordinator" rather than an MCA staff person. Community coordinators are parents/learning coaches who volunteer to coordinate activities. Staff are encouraged to go to field trips to interact with students, and "as many staff can go, do." In those cases, MCA covers the cost of mileage, car rentals and entrance fees for staff. Additionally, they cover the cost of participating (transportation, fees, etc.) of field trips for students with financial need.

Cost Analysis

MCA did not report any transportation costs related to regular instruction activities. It is possible that such activities were coded as extra-curricular or co-curricular and are included in the costs described in that section above.

Relative costs

There is no EPS model component for field trips, and comparison data for non-charter schools are not routinely compiled. This report section was provided for contextual information only.

Career and Technical Education (CTE)

Description

Maine's virtual charter schools are required to provide access to career and technical education programming, including transportation, to students wishing to participate. It does

not appear that any student chose to participate in a Maine CTE program in 2014-2015 school year, however, thus there were no expenses incurred. This could change in the future if a student decides to engage in a local CTE program and MCA would be required to pay for services received.

MCA offers 30 courses in 11 different career preparation areas as part of the elective course catalog available through Connections Academy. Data on student participation in these courses was not available at the time of writing.

Cost Analysis

The CTE funding component of the EPS model is currently based on past expenditures. Thus charter schools whose students participate in CTE programs must fund those costs up front, and will receive additional allocation for the expenses in their EPS allocations two years later. This delay in funding is a potential obstacle for charter schools (and also for non-charter schools). The ability of charters to absorb these costs depends on whether the growth in student participation is slow or rapid.

Relative costs

The relative cost is not applicable, as districts only receive EPS allocation if they have expenditures.

Other added expenses

Charter commission fee

All Maine charter schools pay a fee equivalent to 3% of their annual EPS allocation to support the Maine Charter School Commission's costs for overseeing the charter school program. There is no equivalent fee for traditional school districts.

Summary of Costs Relative to EPS

This initial attempt to study the costs of Maine virtual charter schools provides a preliminary picture of the differences between costs in virtual charter schools and Maine's Essential Programs and Services funding model. However, limitations in the available data

impeded concrete determinations in some areas. Lack of high-quality data was attributable to four discrete issues:

1. Data were not available, and will not be available without substantial accounting changes (e.g. describing the costs of supporting disadvantaged students, and estimating the impact of receiving an effective regional adjustment that differs from the location of the charter school building). These issues are likely to persist indefinitely unless policy changes are made.
2. Data were available and were able to be analyzed, but were from the start-up year at only one school (MCA). They may not be indicative of future costs once schools are operating at full capacity and no major changes in supports, student demographics, or program design are anticipated. Also, the one school may not be typical or representative of all Maine virtual charters. This problem will lessen over time as additional years of expenditure data become available for both MCA and MEVA. Both schools will operate at full capacity in 2018-19.
3. Expenditure data were reported, but were difficult to break down into specific EPS components because they comprised multiple types of costs. For example, the Connexus annual license fee ($608 per student in 2014-15) encompasses myriad services for students, teachers, and administration that are bundled into a single service charge.
4. Non-expenditure data that could be compiled, but would require substantial effort on the part of virtual school staff. These data could help to place certain expenses in context but were not actual expenditures and were thus deemed beyond the scope of the current study. This category includes student participation data such as enrollment in specific elective courses and participation in field trips and extra-curricular activities.

Despite these limitations in data, certain differences were large enough to be characterized as structural differences in operating costs. As summarized in Table 6, several areas showed evidence of costs that are lower than the EPS model, and others were higher

than the EPS allocation provides. Two areas are prefaced as being "likely" higher (membership) or lower (extra-curricular activities) because although data were incomplete, the available evidence leaned strongly in one direction. Other areas were indeterminate based on the FY2015 data.

Table 6. Summary of Virtual School Costs Relative to EPS Model

	Virtual School FY2015 Cost Relative to EPS
Staff Costs	
Teacher to student ratios	Lower
Other staff to student ratios	Mixed
Substitute Teachers	Lower
Benefits	Higher
Regional adjustment	Higher
Staff Costs, Overall Assessment	*Indeterminate*
All Other Operating Costs	
Membership (enrollment & attendance monitoring)	Likely higher
Supplies and Equipment	Higher
Professional Development	Indeterminate
Co- and Extra-Curricular Activities	Likely lower
System Administration	Higher (Similar to Traditional SAUs)
Operation and Maintenance of Facilities	Lower
Students with Limited English Proficiency	Indeterminate
Economically Disadvantaged Students	Indeterminate
Technology	Higher
Student Assessment	Indeterminate
Special Education	Similar to Traditional SAUs
Transportation	Same as EPS Allocation ($0)
CTE	Same as EPS Allocation ($0)
Charter School Commission Fee (3%)	Higher; no EPS Allocation

Conclusions & Recommendations

The impetus for the current study was a concern about the potential for over-funding of Maine's virtual charter schools. Perhaps the most salient finding for addressing this question is included in Table 1, which illustrates that Maine's virtual charter schools receive and spend substantially less money per pupil than brick and mortar public schools. MCA was allocated $8,117 per pupil in FY15 compared to $10,909 per pupil in non-charter public school districts, and spent $8,270 per attending pupil compared to $11,105 per pupil (not including transportation costs). This may allay one of the most pressing concerns about virtual school funding in the state.

The preliminary findings suggest that the cost structure of Maine's virtual schools does differ from the Essential Programs and Services cost model. Thus there may be merit in developing a cost model specifically for public virtual schools in the state in order to more closely align funding to school costs. However, if further efforts are undertaken, two factors would be essential for producing an accurate cost model.

First, it would be important to have additional years of expenditure data representing both of Maine's virtual charter schools. In FY 2018 both schools are expected to be operating at full student capacity, and the Maine Virtual Academy will be in its third year of operation. A study conducted in 2018-19 would thus have three years of data from each school and could assess the stability and consistency of their costs in each category. In addition, with advance notice it would be more likely that the schools could work with their partner organizations (Connections Education and K12, Inc.) to be able to isolate cost categories within certain per-student fees or licensing charges that currently encompass multiple types of services. This would improve accuracy of the expenditure data analysis.

Secondly, with additional time the national literature base may evolve and produce more evidence on the optimal models for high-quality virtual school programs (i.e. those that have positive student learning outcomes). At present, there is no empirical data to suggest an appropriate virtual student-to-teacher ratio (or perhaps different ratios for different types of instructional formats). Schools of all types will, of necessity, build budgets based on the funds they have available to them. If a cost model is developed based solely on expenditure data, the

model will reflect what schools could *afford* to pay. The actual number of teachers hired may thus be more or less than what may be needed to deliver an effective program. Since the student-to-teacher ratio is a large cost driver, this question is important for the overall cost model.

It is thus recommended that additional study (including an updated literature review) be conducted in FY2019 or later to further pursue a virtual school cost model for Maine. In addition, we recommend that attention be given to the program evaluation of Maine's two virtual charter schools. Each school is required to undergo external review as part of its charter agreements. Ideally, the program evaluations should be expanded to include a robust analysis of student learning outcomes. This would help to inform how expenditure data from each school may be weighed when conducting future cost analyses (i.e. if the two schools differ in their effectiveness, their expenditures may be treated differently). It would also allow Maine to contribute to the national knowledge base about effective models for virtual schooling.

In conclusion, the analysis of expenditures at one Maine virtual charter school revealed that there are likely differences from the cost model in the Essential Programs and Services funding allocation. However, given the incompleteness of available data, further work on developing a separate cost model should be delayed until both schools have been in operation for three or more years.

References

Anderson, A.H., Augerblik, J., DeCescre, D. and Conrad, J. (October, 2006*). 20/20: Costs and funding od virtual schools*. Retrieved from https://www.heartland.org/sites/all/modules/custom/heartland_migration/files/pdfs/28390.pdf

Battaglino, T. B., Halderman, M., & Laurans, E. (2012). The costs of online learning. In B.C. Hassel, E.A. Hassel, F.M. Hess, T.B. Battaglino, M. Haldeman, P. T. Hill, J.E. Chubb (Eds.) *Education reform for the digital era* (pp. 55-76). Washington, D.C.: Thomas B. Fordham Institute.

Bloomberg (June, 2016). *Company Overview of Connections Education.* Retrieved from http://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=140526854

Clark, T. (2013). The Evolution of K-12 Distance Education and Virtual Schools. In M.G. Moore (Ed). *Handbook of Distance Education*. New York, NY: Routledge.

Colorado Department of Education, Office of Blended Learning (June, 2014). *Summary report for online schools and programs*. Retrieved from https://www.cde.state.co.us/sites/default/files/2014%20Online%20Summary%20Report_Final.pdf

Connections Education LLC (n.d.). *Connections Education.* Retrieved from http://www.connectionseducation.com

Education Commission of the States (January, 2016). *Charter schools – does state law explicitly permit cyber/virtual charter schools?* Retrieved from http://ecs.force.com/mbdata/mbquestNB2?rep=CS1530

Gemin, B. Pape, L., Vashaw, L, and Watson, J. (2015) *Keeping Pace with K-12 Digital Learning: An annual review of policy and practice* (12th edition). Durango, Co: Evergreen Education Group. Retrieved from http://www.kpk12.com/wp-content/uploads/Evergreen_KeepingPace_2015.pdf.

Illinois State Charter School Commission (2014). Virtual charter school report. Chicago, IL: author. Retrieved from http://www.isbe.state.il.us/scsc/pdf/vsag-final-report.pdf

K12, Inc. (n.d.) *Cooperate profile.* Retrieved from http://investors.k12.com/phoenix.zhtml?c=214389&p=irol-homeProfile#.V0hp1ZODGko .

Kleats, I. (September, 2014). *LESC Charter School Subcommittee Report*. Albuquerque, NM: Education Legislation Study Committee.

Kansas Legislative Division of Post Audit (2015). *K-12 Education: Reviewing virtual school costs and student performance.* Topeka, KS: Author.

Nathan, J. (2013) *Summary of state virtual charter public school funding policies.* St. Paul, MN: Center for School Change. Retrieved from http://centerforschoolchange.org/wp-content/uploads/2012/09/Summary-of-State-Policies.pdf

Maine Connections Academy (n.d.). *Our mission*. Retrieved from http://www.connectionsacademy.com/maine-virtual-school

Maine Education Policy Research Institute (2010) *Analysis of the Essential Programs and Services Systemwide Cost Components: System Administration and Operations and Maintenance. https://usm.maine.edu/sites/default/files/cepare/ AnalysisEPSSYSWideCostComp3_11.pdf*

Maine Education Policy Research Institute (2016) *Analysis of the Essential Programs and Services Special Education Cost Component* (Publication pending).

Maine Learning Innovations (August, 2014). *Public Virtual Charter School Application: Maine Virtual Academy.* Retrieved from http://www.maine.gov/csc/requests/MaineVirtualAcademyApplication.pdf

Molnar, A., Huerta, L., Shafer, S. R., Barbour, M.K., Miron, G., Gulosino, C. (2015). *Virtual Schools in the U.S. 2015: Politics, Performance, Policy, and Research Evidence*. Boulder, CO:

National Education Policy Center. Retrieved from http://nepc.colorado.edu/publication/virtual-schools-annual-2015

Patrick, S., Myers, J., Silverstein, J., Brown, A., Watson, J. (2015). *Performance-based Funding & Online Learning: Maximizing Resources for Student Success.* Vienna, VA: International Association for K–12 Online Learning. Retried from https://www.inacol.org/wp-content/uploads/2015/03/iNACOL-Performance-Based-Funding-and-Online-Learning.pdf

Pazhouh, R. Lake, R. and Miller, L. (2015). *Policy framework for online charter schools*. Seattle, WA: Center on Reinventing Public Education. Retrieved from http://www.crpe.org/publications/policy-framework-online-charter-schools

Watson, Pape, Murin, Gemin and Vashaw (2014). *Keeping Pace with K-12 Digital Learning: An annual review of policy and practice (*11th edition*).* Durango, Co: Evergreen Education Group. Retrieved from http://www.kpk12.com/wp-content/uploads/EEG_KP2014-fnl-lr.pdf

Wisconsin Legislative Audit Bureau (2010). *An evaluation: virtual charter schools (Report 10-3) Madison, WI*: author. Retrieved from http://legis.wisconsin.gov/lab/reports/10-3full.pdf

Appendix A. Overview of virtual schooling in selected states

State	Permits Virtual Charter Schools?	Virtual school funding relative to public schools and/or brick-and-mortar charter schools [a]	Additional notes on state's virtual learning options
Alaska	Y	Funded at 80% of brick-and-mortar charter schools.	The Alaska Learning network provides supplemental virtual/distance learning for all AK school districts. [a]
Arizona	Y	Funded at 95% of brick-and-mortar charter schools.	Some school districts offer non-charter virtual schools. [a] Any public district or charter school may apply to become an Arizona Online Instruction provider and offer courses to K-12 students in any charter or district school. These courses are funded at 85% of base per student funding. [b]
Arkansas	Y	Per-pupil funding on par with brick-and-mortar charter schools.	Arkansas Virtual High School is non-charter virtual program that offers courses, but not diplomas. [a]
California	Y	May be funded up to 100% (see next column).	Funding *can* be up to 100% of brick-and-mortar charter schools. Schools must demonstrate compliance with a variety of requirements aimed at ensuring equity, including that 80% of school's budget is spend on instruction. [a] Virtual charter schools in California may only serve students within contagious counties. [c]
Colorado	Y	Receive minimum funding available to brick-and-mortar charter schools.	Some school districts and some multi-district collaborative have virtual school options. [a]
Connecticut	N	n/a	Does not permit virtual charters. Permits brick-and-mortar charter schools. [a] Connecticut Virtual Learning provides options for supplemental learning, AP courses, and credit recovery [a]
Delaware	N	n/a	Does not permit virtual charters.[a]
Florida	Y	May be funded at lower level than brick-and-mortar schools. Funding is based on school performance.	Florida Virtual School is a state-funded non-charter virtual school for K-12 students, who can enroll on a part- or full-time basis. Districts can also run their own franchises of FLVS. [a] 240,000 Florida students took at least one online course in 2013-14. [b] Florida had 11 virtual charter schools in operation in during the 2014-2015 school year.[c]
Georgia	Y	Virtual charters receive 20% less in Quality Basic Education funds.	Georgia Virtual School is non-charter virtual program operated by the State and offers courses to high school students. [a] Georgia Cyber Charter is one of the largest virtual charter schools in the country, serving over 14,000 students. [c]

Hawaii	Y	Funded on a par with brick-and-mortar charter schools and public school districts.	The Hawaii Virtual Learning Network coordinates virtual courses offered by charter and non-charter schools .[a]
Idaho	Y	Funded on a par on a par with brick-and-mortar charter schools and school districts.	The Digital Learning Academy is non-charter virtual program that offers courses throughout the state [a]
Illinois	Y (moratorium on additional schools)	Funded on a par with brick-and-mortar charter schools and public school districts.	Illinois Virtual School is non-charter virtual program that offers courses but not diplomas. [a] There is a moratorium on opening additional virtual charter schools until December, 2016.
Indiana	Y	Funding at 90% of brick-and-mortar charter schools.	Some districts have their own virtual schools. [a] Educational service centers, districts and other institutions provided 18,000 supplemental virtual course enrollments in 2013-14.[b]
Iowa	y	Funded on a par with brick-and-mortar charter schools and public school districts.	Iowa Learning On-line is the state's non-charter virtual program that offers courses for high school students. [a]
Kansas	Y	Funded on a par with brick-and-mortar charter schools and public school districts (with adjustments—see next column).	Funding for virtual charter schools is adjusted depending on enrolled student characteristics. [a] Some districts have their own virtual schools, and some brick charter schools offer virtual programs. [a]
Louisiana	Y	Funding at 90% of brick-and-mortar charter schools.	Louisiana previously operated a state virtual school; now operates statewide Supplemental Course Academy. [b]
Maine	Y	Funded on a par with brick-and-mortar charter schools and public school districts.	The Maine Online Learning Program offers access to online courses to students statewide, and some districts also offer online learning options. [a] Maine's first virtual school opened for 2014-2015 school year. [b]
Maryland	N	n/a	State law does not permit virtual charters. The Maryland Virtual Learning Opportunities Program is non-charter virtual program that offers courses, but not diplomas, to high school students. [a]
Massachusetts	Y	State funds ($5000 per student), plus additional costs if approved by the state, follow the student.	Permits virtual schools through its Commonwealth of Massachusetts Virtual School (CMVS) program. [a] Some districts also offer virtual programs and courses through the Virtual High School Collaborative. [a]
Michigan	Y	Funded on a par with brick-and-mortar charter schools and public school districts.	The Michigan Virtual School is non-charter virtual program that offers courses to middle and high school students. Some school districts also operate their own virtual schools. [a]
Minnesota	Y	Funded on a par with brick-and-mortar charter schools and public school districts.	Some school districts also operate their own virtual schools. [a] Virtual charters and district programs offer full- and part-time options to students across the state. [b]

			As of 2014, 27 online providers are approved by the state to operate virtual education programs. [b]
Mississippi	N	n/a	State law prohibits virtual charter schools. [a] Mississippi Virtual Public School has been established by the state. [a]
Missouri	N	n/a	Does not permit virtual charters. [a] Missouri Virtual Instruction Program was established by the state and offers courses to K-12 students. [a]
Nevada	Y	Funded on a par with brick-and-mortar charter schools and public school districts.	Some districts offer their own virtual schools and programs. [a]
New Hampshire	Y	Funded on a par with brick-and-mortar charter schools and public school districts.	NH's virtual charter school also enrolls students part-time from other schools. [a]
New Jersey	Y	Funded on a par with brick-and-mortar charter schools and public school districts.	New Jersey Virtual School is non-charter statewide virtual school. [a]
New Mexico	Y	Funded on a par with brick-and-mortar charter schools and public school districts.	IDEAL-NM is a is non-charter virtual program that offers courses to middle and high school students. [a]
New York	Not addressed in state law		State law does not address virtual charter schools; however, existing provisions may preclude their opening/operation. [a] Supplemental online courses available through BOCES and, in NYC, through ilearnNYC, which served 76,408 online enrollments in 2013-14.[b] Online AP courses available through Virtual Advanced Placement program. [b]
North Carolina	Y	Funding on par with that provided to NCVS, which is below that provided to brick-and-mortar charter schools.	North Carolina Virtual School offers online courses to public school students. [a]
Ohio	Y	VCS receive 59% of per-pupil allocation of 8 largest districts (brick-and-mortar charter schools receive 69%).	Ohio had 24 virtual charter schools in operation in school year 2014-2015, and one of the largest enrollments in full-time virtual charter schools in the country. [c] There are also non-charter virtual schools operated by educational service centers and individual districts. [a]
Oklahoma	Y	Funded on a par with brick-and-mortar charter schools and public school districts.	
Oregon	Y	Funded on a par with brick-and-mortar charter schools and public school districts.	Oregon also has "hybrid" charter schools that offer virtual programs. [a]
Pennsylvania	Y	Funded on a par with brick-and-mortar charter schools and public school districts.	There were over 36,000 students enrolled in virtual charter school in Pennsylvania in the 2014-2015 school year. [c]
Rhode Island	Y	Funded on a par with brick-and-mortar charter schools and public school districts.	Some schools offer virtual programming through a state or regional collaborative. [a]

South Carolina	Y	Receive $1,550 less per-pupil than brick-and-mortar charter schools.	H3097, the state law that allowed for the establishment of virtual charter schools, includes a requirement that 25% of instruction be synchronous. [c] Many districts offer their own virtual schools. The state also offers a program that provides virtual courses for middle and high school students.[a]
Tennessee	N	n/a	One local school district offers a non-charter virtual school for Tennessee students in grades K-8. [a]
Texas	Y	Virtual operators in operation before Jan., 2013 receive same per-pupil funding as brick-and-mortar charter schools; all other virtual programs receive per-pupil funding for 3 classes a year.	The state has a non-charter virtual school run by a group of Educational Service Cooperatives. [a]
Utah	Y	Funded on a par with brick-and-mortar charter schools and public school districts.	Utah Electronic High School is non-charter virtual program that offers courses to students statewide. In a few cases, students may graduate from UEHS. [a]
Virginia	Y		There were no virtual charter schools operating in Virginia in the 2014-2015 school year. [c] Some districts offer virtual schools. Virtual Virginia is a statewide virtual program that offers courses to middle school and high school students. [a]
Washington, D.C.	Y	Funded on a par with brick-and-mortar charter schools and public school districts.	
Washington	Y		Permits virtual charters run by non-profit groups [a] The state has a number of virtual schools that were established before the charter law of 2012. [a] 94 providers served 23,466 enrollments to students in full- and part-time programs. [b]
Wisconsin	Y	Funding level depends on contract with local district that serves as authorizer.	Funding level depends on contract with local district that serves as authorizer. [a] Wisconsin Digital Learning Collaborative is a statewide non-charter virtual program. [a]
Wyoming	Permits virtual charters with brick site.	Per-pupil funding is dependent on contract with school district, which serves as authorizer.	The Wyoming Switchboard Network is a collection of organizations that provide virtual courses to K12 students. [a]

[a] Nathan, 2013
[b] Watson, Pape, Murin, Gemin and Vashaw, 2014
[c] Germin, Papre, Vashaw and Watson, 2015