



VIRTUAL SCHOOLS IN THE U.S. 2015

POLITICS, PERFORMANCE, POLICY,
AND RESEARCH EVIDENCE

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March 2015

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This is one of a series of briefs made possible in part by funding from
The Great Lakes Center for Education Research and Practice.



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Suggested Citation:

Molnar, A. (Ed.); 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 [date] from <http://nepc.colorado.edu/publication/virtual-schools-annual-2015>.

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VIRTUAL SCHOOLS IN THE U.S. 2015: POLITICS, PERFORMANCE, POLICY, AND RESEARCH EVIDENCE

Alec Molnar, Editor, University of Colorado Boulder

Executive Summary

Section I: Key Policy Issues in Virtual Schools

*Luis Huerta and Sheryl Rankin Shafer
Teachers College, Columbia University*

While state legislatures have proposed bills that attempt to increase oversight of virtual schools, there is little evidence that legislative actions are being informed by the emerging research on virtual schools.

Recommendations arising from Section I

- Develop new funding formulas based on the actual costs of operating virtual schools.
- Develop new accountability structures for virtual schools, calculate the revenue needed to sustain such structures, and provide adequate support for them.
- Establish geographic boundaries and manageable enrollment zones for virtual schools by implementing state-centered funding and accountability systems.
- Develop guidelines and governance mechanisms to ensure that virtual schools do not prioritize profit over student performance.
- Require high-quality curricula, aligned with applicable state and district standards, and monitor changes to digital content.

- Develop a comprehensive system of summative and formative assessments of student achievement, shifting assessment from a focus on time- and place-related requirements to a focus on student mastery of curricular objectives.
- Assess the contributions of various providers to student achievement, and close virtual schools and programs that do not contribute to student growth.
- Define new certification training and relevant teacher licensure requirements and continually improve online teaching models through comprehensive professional development.
- Address retention issues by developing guidelines for appropriate student-teacher ratios.
- Work with emerging research to create effective and comprehensive teacher evaluation rubrics.

Section II: Limited Evidence, Little Guidance: Research to Guide Virtual School Policy

Michael K. Barbour, Sacred Heart University

More than twenty years after the first virtual schools began, there continues to be a dearth of empirical, longitudinal research to guide the practice and policy of virtual schooling.

Recommendations arising from Section II

- Policymakers regulate the growth and geographic reach of full-time, taxpayer-funded virtual schools. At present there are serious questions about the effectiveness of many models of virtual schooling. Until these questions can be adequately addressed, policymakers should focus their efforts on promoting virtual school models that have shown to be successful, while limiting those models that have resulted in questionable student performance.
- State and federal policymakers create long-term programs to support independent research on and evaluation of virtual schooling, particularly full-time virtual schooling. The most critical research issues include: how to determine accurate costs for virtual schooling; how to assess proposals for virtual schools and their ongoing performance; how to identify good teaching and prepare good teachers for this context; and, how the business model of for-profit virtual schooling (including alternative management arrangements) affects the quality of online learning experiences.

Section III: Full-Time Virtual Schools

Gary Miron, Western Michigan University

Charisse Gulosino, University of Memphis

Strong growth in enrollment of virtual schools has continued, with large virtual schools operated by for-profit education management organizations (EMOs) continuing to dominate this sector, operating 40.2% of virtual schools but accounting for 70.7% of all enrollments.

In the 2013-14 school year, one in four virtual schools received no performance rating at all, while of 285 schools that were rated, only 41% were judged academically acceptable. Full-time virtual schools continue to lag significantly behind traditional brick –and-mortar schools.

Recommendations arising from Section III

- That policymakers slow or stop growth in the number of virtual schools and the size of their enrollment until the reasons for their relatively poor performance have been identified and addressed.
- That policymakers specify and enforce sanctions for virtual schools if they fail to improve performance.
- That policymakers require virtual schools to devote more resources to instruction, particularly by reducing the ratio of students to teachers. Given that all measures of school performance indicate insufficient or ineffective instruction and learning, these virtual schools should be required to devote more resources toward instruction. Other factors, such as the curriculum and the nature of student-teacher interactions, should also be studied to see if they are negatively affecting student learning.
- That policymakers and other stakeholders support more research for better understanding of the characteristics of full-time virtual schools. More research is also needed to identify which policy options—especially those impacting funding and accountability mechanisms—are most likely to promote successful virtual schools.
- That state education agencies and the federal National Center for Education Statistics clearly identify full-time virtual-schools in their datasets, distinguishing them from other instructional models. This will facilitate further research on this subgroup of schools.
- That state agencies ensure that virtual schools fully report data related to the population of students they serve and the teachers they employ.

- That state and federal policymakers promote efforts to design new outcome measures appropriate to the unique characteristics of full-time virtual schools. The waivers from ESEA present an opportunity for those states with a growing virtual school sector to improve upon their accountability systems for reporting data on school performance measures.

VIRTUAL SCHOOLS IN THE U.S. 2015:

POLITICS, PERFORMANCE, POLICY, AND RESEARCH EVIDENCE

Introduction

Virtual education continues to be a focal point for policymakers interested in expanding education choices and improving the efficiency of public education. In particular, full-time virtual schools, also known as online schools or cyber schools, have attracted a great deal of attention. Proponents argue that online curriculum can be tailored to individual students and that it has the potential to promote greater student achievement than can be realized in traditional brick-and-mortar schools. Further, lower costs—primarily for instructional personnel and facilities—make virtual schools financially appealing. Assumptions about the cost-effectiveness of virtual schools coupled with policies that expand school choice and provide market incentives attractive to for-profit companies have fueled a fast-growing virtual school expansion in the U.S.

This report is the third of a series of annual reports by the National Education Policy Center (NEPC) on virtual education in the U.S. The NEPC reports contribute to the existing evidence and discourse on virtual education by providing an objective analysis of the evolution and performance of full-time, publicly funded K-12 virtual schools. Specifically, the NEPC reports: analyze the universe of proposed state bills related to virtual education; assess the research evidence that bears on K-12 virtual teaching and learning; describe the policy issues raised by available evidence; analyze the growth and performance of full-time virtual schools; and, offer recommendations for future research. The 2015 report presents several important findings:

- Policymakers continue to face difficult challenges in the areas of funding and governance; instructional program quality; and recruitment and retention of high quality teachers.
 - Significant policy issues associated with funding and governance include linking funding to actual costs, identifying accountability structures, delineating enrollment boundaries and funding responsibilities, and limiting profiteering by EMOs.
 - Significant policy issues associated with instructional program quality include ensuring the quality and quantity of curricula and instruction, as well as monitoring student achievement.

- Significant policy issues associated with the recruitment and retention of high-quality teachers include identification of appropriate skills for online teaching, designing and providing appropriate professional development, and designing appropriate teacher evaluation.
- Claims made in support of expanding virtual education are largely unsupported by high quality research evidence.
- A total of 400 full-time virtual schools enrolling an estimated 263,705 students were identified, an enrollment increase of some 2,000 students since last year's report; 73% of the identified students were enrolled in charters operated by Education Management Organizations (EMOs). In 2013-14, the largest for-profit operator of virtual schools, K12 Inc., alone enrolled over 95,535 students (37% of the total full-time virtual school student enrollment).
- Compared with conventional public schools, full-time virtual schools continue to serve relatively few Black and Hispanic students, impoverished students, and special education students.
- On the common metrics of Adequate Yearly Progress (AYP), state performance rankings, and graduation rates, full-time virtual schools lagged significantly behind traditional brick-and-mortar schools.

Our first report in 2013 report provided an initial set of research-based recommendations to guide policymaking on virtual education; subsequent reports, including this one, revisit those recommendations to document the degree to which progress is being made toward more sound policies for virtual education in the U.S. When appropriate, earlier recommendations may be revised.

This 2015 report is organized in three major sections. Section I examines the policy and political landscape associated with virtual schooling and describes the current state of affairs related to finance and governance, instructional program quality, and teacher quality. The authors analyze to what extent, if any, policy in the past year has moved toward or away from the 2014 recommendations. Based on an analysis of legislative development across all states, the authors find that troubling issues continue to outpace informed policy.

Section II reviews the research relevant to virtual schools. It finds that despite considerable enthusiasm for virtual education in some quarters, there is little credible research to support virtual schools' practices or to justify ongoing calls for ever greater expansion. The authors find that even as research on virtual schooling has increased, there is still little high-quality evidence that justifies ongoing calls for the expansion of virtual schools.

Section III provides a descriptive census of full time virtual schools and their expansion based on data gathered from state, corporate and organizational sources. Details on enrollment include the student characteristics of: race/ethnicity; sex; free and reduced

lunch eligibility; special education designation; ELL status; and grade level. Other information includes student-teacher ratios. In addition, details on student achievement include: Adequate Yearly Progress (AYP) ratings; state ratings, and graduation rates.

Section I

Key Policy Issues in Virtual Schools: Finance and Governance, Instructional Quality, and Teacher Quality

*Luis Huerta and Sheryl Rankin Shafer**
Teachers College, Columbia University

Executive Summary

This section draws from a comprehensive analysis of all proposed and enacted virtual school legislation in 50 states during the 2014 legislative session, building on our earlier work detailing the 2012 and 2013 sessions. We asked whether legislatures have been moving closer to or further from core recommendations advanced in this NEPC series. Our analysis revealed that state legislatures have proposed bills that attempt to increase oversight of virtual schools; however, we found little evidence to indicate that legislative actions are being informed by the emerging research on virtual schools.

Recommendations arising from Section I are for policymakers to:

- Develop new funding formulas based on the actual costs of operating virtual schools.
- Develop new accountability structures for virtual schools, calculate the revenue needed to sustain such structures, and provide adequate support for them.
- Establish geographic boundaries and manageable enrollment zones for virtual schools by implementing state-centered funding and accountability systems.
- Develop guidelines and governance mechanisms to ensure that virtual schools do not prioritize profit over student performance.
- Require high-quality curricula, aligned with applicable state and district standards, and monitor changes to digital content.
- Develop a comprehensive system of summative and formative assessments of student achievement, shifting assessment from a focus on time- and place-related requirements to a focus on student mastery of curricular objectives.

* *Jennifer King Rice's contributions to previous editions of the report produced research findings that were essential to this edition.*

- Assess the contributions of various providers to student achievement, and close virtual schools and programs that do not contribute to student growth.
- Define new certification training and relevant teacher licensure requirements and continually improve online teaching models through comprehensive professional development.
- Address retention issues by developing guidelines for appropriate student-teacher ratios.
- Work with emerging research to create effective and comprehensive teacher evaluation rubrics.

Section I

Key Policy Issues in Virtual Schools: Finance and Governance, Instructional Quality, and Teacher Quality

Policymakers continue to struggle to reconcile traditional funding structures, governance and accountability systems, instructional quality, and staffing demands with the unique organizational models and instructional methods associated with virtual schooling. State legislatures are beginning to respond, as evidenced by proposed bills that attempt to increase oversight of virtual schools; however, as we discuss below, fewer than 30% of proposed bills have been enacted. In addition, there is little evidence to support the view that legislative actions are informed by the emerging research on virtual schools.

This first section of the report will revisit the critical policy issues that we introduced in the 2013 and 2014 reports, specifically:

- Finance and governance
- Instructional program quality
- High-quality teachers.

In the 2013 report we defined these critical policy areas and presented the emerging research evidence; then, in the 2014 report we shifted our focus to the legislative actions that illustrate how states are addressing evolving virtual school models. Last year's legislative analysis, which examined all proposed and enacted virtual school legislation in 50 states from 2012 and 2013, serves as a baseline for a new comprehensive analysis of all virtual school legislation introduced in 2014. In addition, we draw on our own research, recent policy reports and research, and popular press accounts. As a reorientation, we reintroduce and provide updates to our earlier tables summarizing critical policy issues, relevant assumptions, and related unanswered key empirical questions. Lastly, we revisit our policy recommendations and examine multiple data sources to gauge legislative progress toward them.

Comprehensive Analysis of 2014 Legislation

Our comprehensive analysis of all proposed and enacted virtual school legislation in 50 states during the 2014 legislative session employed the National Conference of State Legislatures (NCSL) Legislative Tracking database. We identified legislation using the keywords *cyber, virtual, online, technology, non-classroom-based, distance learning, and digital learning*. An initial search yielded nearly 1,400 bills in 2014, with nearly every state considering legislation. Many bills eventually proved related to technology expansion in other public sectors. Closer review targeting new, revised or revoked programs specific to K-12 virtual education narrowed the list considerably. In 2014, 131 bills were considered in 36 states; 38 were enacted, 62 failed and 31 are pending (see Appendix A, which provides a comprehensive listing as well as summaries of bills relevant to our concerns). In 2013, 127

bills were considered in 25 states; 29 were enacted, 7 failed and 92 are pending. In 2012, 128 bills were considered in 31 states; 41 were enacted and 87 failed. The raw number of bills introduced, then, has remained comparable in recent years. However, analysis of a third legislative session provides a richer understanding of how legislators are promoting, revising and curbing evolving virtual school models as compared to previous years. In addition, a third year of legislative analysis allowed us to track whether legislative trends are moving closer to or further from core recommendations advanced in this NECP report series.

In 2014, myriad bills on virtual schooling touched on a wide range of proposals. Some were relatively narrow, as in a proposal to exempt virtual schools from providing transportation services and to prohibit them from receiving transportation funding (OK S1463). Others were more general. For example, four states proposed pilot programs or task forces on virtual schools to test the development of virtual schools (NC, NY, TN, CO), and others moved to link funding to actual costs and to promote increased accountability of instructional time and program quality (IL, MI, MO, VA, AZ, FL, ME). Three states (FL, MI, MO) showed the most legislative activity, with eight or more bills proposed in each. Our analysis, however, focused on the substance of bills across all states rather than relative activity within individual states.

Two important trends to note in 2014 legislative activity are: 1) proposed legislation calling for the creation of state-run virtual schools, or establishing rules for the operation of district sponsored virtual schools (AL, GA, ME); and 2) the creation of task forces or pilot programs to explore the development of virtual schooling options (NC, NY, TN, CO). For example, in Maine (ME S689) the state legislature supported a proposal to create a state-run virtual academy, but the governor vetoed it. A bill proposing a state-run virtual school in Georgia also failed. In Alabama, four failed bills (AL S428; AL H479; AL S345; AL S 428) attempted to authorize the creation of virtual public schools. Tennessee (TN H1810) proposed state grants to support the creation of blended learning programs, but that bill also failed. North Carolina (NC S744), however, enacted a proposal to create two pilot K-12 virtual charter schools. In New Jersey (NJ S989) and New York (NY A9110) proposals to create task forces to explore the expansion of both blended and full-time virtual programs are pending. And in Colorado (CO HB1283), a task force was created to oversee authorizers of multi-district online schools, as well as to explore the creation of quality standards and practices for virtual school authorizers.

Finance and Governance

Identifying funding, governance and accountability mechanisms associated with operating virtual schools continues to be a challenge for policymakers and practitioners. Table 1.1 reintroduces the policy issues, assumptions and empirical questions related to virtual school finance and governance. Below, we update earlier information based on new research and introduce policy issues that have surfaced since our 2014 report.

Table 1.1 Finance and Governance Questions for Virtual Schools

Policy Problem	Assumptions	Empirical Questions
Linking funding to actual costs	Lower staffing and facilities costs outweigh higher costs associated with content acquisition and technology.	<ul style="list-style-type: none"> • What are the costs associated with virtual schools and their various components? • How do the costs change over time? • How are costs affected by different student characteristics and contextual factors? • What are the implications for weights and adjustments?
Identifying accountability structures	Existing accountability structures provide sufficient oversight of virtual school governance and instructional delivery.	What forms of alternative financial reporting might be useful to policymakers in monitoring the performance of virtual schools?
Delineating enrollment boundaries and funding responsibilities	School choice with open enrollment zones will increase competition and access to higher quality schools.	<ul style="list-style-type: none"> • Are local districts or state officials best suited to oversee virtual school operations? • Who should ultimately be responsible for funding virtual students? • How might state-centered vs. local funding lead to a more stable source of revenue?
Limiting profiteering by EMOs	Diverse educational management and instructional services providers will increase efficiency and effectiveness of virtual instruction.	<ul style="list-style-type: none"> • How much profit are for-profit EMOs earning through the operation of virtual schools? • What is the relationship between profits and quality instruction?

Linking Funding to Actual Costs of Virtual Schools

Policy debates persist in some states over how to fund full-time virtual schools, both because of cost differences between virtual and traditional brick-and-mortar schools and because of other policy considerations. As yet, no state has implemented a comprehensive formula that ties funding allocation directly to virtual schools’ actual costs and operating expenditures.

Developing such a comprehensive formula would involve gathering sound and complete data on virtual schools’ costs and expenditures related to governance, program offerings, types of students served, operational costs, student-teacher ratios and other factors. Costs may vary

widely from those in brick-and-mortar schools. For example, virtual schools have lower costs associated with teacher salaries and benefits, facilities and maintenance, transportation, food service, and other in-person services than their brick-and-mortar counterparts. However, virtual schools may have higher costs linked to acquiring, developing and providing the digital instruction and materials necessary for full-time virtual instruction; they also need to acquire and maintain necessary technological infrastructure.

Activity in 2014 indicates that legislation has been introduced and—in some instances passed—that revises virtual school funding. This suggests a growing awareness among state policymakers that virtual school funding is an area that requires serious consideration. For example, in attempts to align funding with actual costs of operating a virtual school, Illinois (IL H 5887, pending) has proposed withholding funds from virtual schools for costs associated with operating a traditional school, including building maintenance, classroom supplies, transportation, safety and security. In Michigan, two pending bills have targeted reduced per-pupil allocations for virtual charter schools. One (MI H 5695) has proposed limiting state aid appropriations to 50% of foundation allowances, and the second (MI H5845) has proposed limiting state aid appropriations to one-third of foundation allowances. (Michigan’s current basic allowance for students in traditional schools is \$8,099.) In Missouri (MO S522), a failed bill proposed limiting allocations for non-district students attending virtual schools to 72.5% of the previous year’s statewide average expenditure per average daily attendance (\$6,716 in 2013-14). And finally, in Virginia (VA HB324) a pending bill has proposed limiting funding for virtual school students: 1) by restricting local revenue allocations to no more than 76%, and 2) by capping total state and local allocations to no more than \$6,500 per student.

Several states (AZ, FL, & ME) have also called for virtual school funding based on continuous enrollment. For example, a failed proposal in Maine (ME H1189) would have provided per-pupil revenue for students in virtual schools based on continuous enrollment, disbursing 50% after the October 1st attendance count, and the remaining 50% after the April 1st attendance count.

Our legislative analysis reveals that no states have calculated funding by methodically determining costs for necessary components of effective and efficient virtual school models. Nor have any states adjusted funding based on a comprehensive analysis of actual cost differences between virtual and traditional models. While some states (IL, MI, MO, VA, for example) have moved to reduce funding, the changes have not been grounded in evidence that could support the legislative objectives. Absent a wider empirical accounting of real costs associated with operating a virtual school, the legislative attempts to reconcile appropriate funding for virtual schools will continue to be fueled more by political motivation than by reliable evidence.

Identifying Accountability Structures

In the past three years, several state legislatures have moved to improve virtual schools’ accountability and governance structures. Accountability challenges linked to virtual

schools include designing and implementing governance structures capable of accounting for expenditures and practices that directly benefit students. For example, it is important to have oversight for costs in such areas as technological infrastructure, digital learning materials, paraprofessional services, and third-party curriculum. Oversight of other areas, such as student attendance and learning transcripts, is necessary to identify and evaluate instructional time and outcomes.

State audits of virtual school operations are an important mechanism for addressing accountability challenges unique to virtual schools. For example, in 2014, Utah undertook a comprehensive audit of its distance and online education programs, prompted by numerous citizen complaints about inadequate LEA supervision of programs operated by contractors.¹ It found that many LEAs across the state engaged in minimal oversight of online programs they managed, or their hired contractors managed, across a wide range of governance responsibilities. For example, several LEAs operating virtual schools were unable to produce records linked to students' attendance and performance. Some LEA-operated virtual programs used progress-based monitoring of student attendance, instead of the strict 10 day rule which requires schools to drop students from attendance logs after 10 consecutive days of unexcused absences. Several LEAs failed to ensure that contractors' courses and curriculum aligned with Utah Core Standards and to verify that teachers delivering specific courses held appropriate Utah licenses.

Similar violations were found for contractor-managed programs. For example, the audit described evidence that in “numerous instances” students who made no progress for more than 10 days remained in enrolled status, allowing the contractors to continue collecting funding.² Contractors were also allowed to hire the entire teaching staff of a virtual school without LEA oversight—which could have ensured staffing by licensed and qualified teachers. And lastly, several LEAs failed to monitor the quality of contractor-provided courses or instruction, including services to home schooled students. Home school courses do not qualify for state funding under Utah state law³; however, several contractors (including Harmony Education Services and My Tech High Inc.) either provided curriculum or allowed home school parents to design their own curriculum. The contractors then offered parents reimbursement of up to \$300 for curriculum they purchased, and billed the LEA for these services.⁴ Harmony Education Services and My Tech High Inc. collected \$10.5 million in state revenues during 2013-14, for claiming they served 2,547 full-time students enrolled through the LEAs they serve as contractors. The questionable practices of contractors that the auditors discovered led them to speculate that “[i]f even 10% of the courses or membership days claimed by the LEAs were deemed out of compliance with state law and Board rule, it could result in a little over \$1 million in potential questioned costs.”⁵

The audit's authors advanced very specific recommendations for how LEAs might increase oversight of both the virtual programs that they operate and those that contractors operate. However, a review of the five bills relating to virtual schools proposed in the Utah State Legislature indicates that none reflected the audit's recommendations for improved regulatory oversight.

Below, we outline how other states are attempting to address similar accountability challenges linked to virtual schools.

Governance: There is evidence that some states are approaching virtual school accountability challenges methodically. Legislation that calls for moratoriums, task forces and commissions charged with wider assessment and evaluation of virtual learning models has been introduced in eight states (CO HB1283, IL H3937, ME S689, NC S744, NJ S989, NY A9110, RI H7755, TN H1810). Only three of eight states enacted legislation in this domain in 2014 (CO, IL & NC), while five bills in other states either failed or are pending.

A new trend apparent in 2014 legislation is evident in proposals addressing oversight of virtual school authorizers, virtual school operators, and contractors or subcontractors hired to manage virtual schools and provide other services. Several proposals require performance-based accountability of online education providers. For example, a pending proposal in Michigan (MI H5917) requires any entity applying to be a virtual school of excellence (charter school) to demonstrate adequate experience in the delivery of a quality online educational program. In addition, the proposal limits the number of virtual charter schools statewide to 15 beginning in 2015. In Arizona (AZ H2315), a failed proposal would have required all new online providers to operate on probationary status for up to 3 years or until they could demonstrate students' academic improvement. Another failed proposal in Arizona (AZ H2555) would have withheld full funding to online course providers until a student demonstrated full mastery of the course content through a department of education approved assessment: under the provision, schools would get 50% of the funding for their students who completed courses with a grade of C-minus or better, with the remaining 50% of funding to be distributed only after students had demonstrated mastery. In Oklahoma (OK SB1663), another failed proposal suggested terminating a virtual charter school contract if a school "received a letter grade of 'D' or lower for three (3) consecutive years or . . . received a letter grade of 'F' for two (2) consecutive years." Colorado (CO HB1383), meanwhile, enacted a bill to convene a task force that will be assigned to review best practices for authorizing and administering multi-district virtual schools and to develop recommendations for quality standards and practices for authorizers.

Enrollment limits and boundaries: Monitoring which virtual schools are providing substantive education services to which students requires delineating enrollment zones and addressing capacity issues. Careful enrollment audits are also necessary to ensure that resident districts are forwarding appropriate local and state per-pupil allocations to virtual schools.

In order to allow time to consider such accountability issues, some states have called for moratoriums or limits on virtual school expansion and for limits on enrollment capacity (including ME, IL, NJ, RI), following a trend observed in 2013 legislation. The moratorium proposals range from a 3-year restriction on new virtual charter schools enacted in Rhode Island (NC S744, pending) to an enacted Illinois proposal (IL H3937,) that extends a 2013 virtual charter school moratorium in Chicago (IL H 494) to other districts. In Maine (ME S689), a proposal to create a state-run virtual academy included a moratorium on all

virtual charter schools and other virtual public schools until the state-run virtual program was operational. The governor vetoed the bill. And in New Jersey (NJ S989) a pending proposal would restrict the establishment of new virtual charter schools until the Virtual Charter School Task Force releases its findings.

Our analysis also revealed that Iowa, Missouri and Arkansas have proposed steps to limit overall statewide enrollment of students in virtual schools. Iowa (IA S2044) would cap statewide student enrollment in online programs to not more than 0.18% of all statewide enrollment, and Missouri (MO SB522) would cap student enrollment of nonresident students in virtual charter and other public schools to 1.75% of the total statewide enrollment. And in Arkansas (AR SB48), a virtual charter school is allowed a maximum total student enrollment of 3,000 students. Of these three proposals, only the Arkansas bill was enacted.

In California, an enacted bill will suspend the requirement that virtual charter school students be residents of a county sharing a contiguous border with the virtual school's home county—but only for students who originally reside within geographic boundaries and then move outside them. Students would be allowed to continue their enrollment after moving “for the duration of courses or until the end of the school year, whichever comes first.”

The bills outlined in this section offer examples of attempts to slow or control the scaling-up of virtual schools while policymakers look carefully at the issues virtual schools are raising, as our earlier work recommends. Overall, our analysis indicates that efforts to study virtual school governance issues in order to inform policy changes via task forces or commissions are moving forward in at least two states. Charged with identifying best practices for governance and delivery of online instruction, the publicly funded task forces and commissions may yield important information for policymakers and practitioners. We will continue to monitor and highlight developments in our future reports.

Eliminating Profiteering by Education Management Organizations

In 2014, legislators in several states responded to the complicated accountability issues and public controversies linked to for-profit education management organizations (EMOs) providing products and services to virtual schools—including software and curriculum, instructional delivery, school management, and governance. Virtual schools that have contracts with for-profit EMOs serve more 70% percent of full-time virtual school students.⁶ K12 Inc. continues to be the largest of the for-profit virtual school providers, operating 99 schools and serving approximately 98,806 students in 2014—more than one-third of the estimated 263,705 full-time virtual school students in the U.S. K12 Inc. profits in 2014 were a net \$55.1 million and total revenues exceeded \$919 million,⁷ compared to 2013 net profit of \$45.7 million and total revenues of over \$848.2 million.⁸ K12 Inc. was again the target of a securities lawsuit, filed in January, 2014 by the Oklahoma Firefighters Pension and Retirement System, which claims that K12Inc. misled investors by publishing positive financial statements that were inconsistent with lower earnings revealed in later

months.⁹ In March 2012, K12 Inc. reached a settlement with its shareholders in a class action lawsuit that alleged the company had violated securities law by making false statements and omissions regarding the performance of students in K12 Inc. schools.

Pennsylvania continues to be at the forefront in attempts to address profiteering by for-profit and nonprofit virtual charter school operators. In 2013, ten bills aimed at curbing profiteering were proposed (more than any other state), but none of the bills were enacted. In 2014, a pending bill (PA H2237) addresses several controversial practices of for-profit virtual charter school operators. For example, some profit from leasing buildings from companies owned by the charter operator; some withhold records acquired or produced under their contracts from public audits. The pending bill: restricts charter school administrators and board members from receiving payment for the rental or lease of a building a charter school uses; restricts charter school administrators from receiving payments from other charter schools or a company that manages or provides services to other charter schools; and restricts charter schools from using buildings “owned by the charter school or a related nonprofit organization, charter school foundation or educational management service provider, including the educational management service provider’s administrators or executives or family member of the educational management service provider’s administrators or executives.” Lastly, the bill requires that any record “produced, obtained or maintained by an educational managed service provider for a charter school under a contract or agreement with a charter school must be readily available to an auditor and investigator and shall be subject to disclosure under the...Right-to-Know Law.”

While legislative proposals aimed at curbing profiteering by for-profit virtual charter school operators have not been successful over the last several years, other efforts by state officials have. Specifically, in January, 2014 the Pennsylvania Department of Education rejected all applicants that proposed to open new full-time virtual charter schools, marking the second consecutive year that all new virtual charter school applications were denied; 14 new applications in all were denied over two years.¹⁰ The rejections were based on the department’s concern that that the “purportedly independent boards of five of the six proposed schools were too closely tied to the for profit companies poised to receive contracts from the new schools if charters were granted.”¹¹

Pennsylvania’s attempts are consistent with our recommendation calling for policy to ensure that for-profit virtual schools do not prioritize profit over student performance.

Recommendations

While it is evident that some states have engaged in efforts to address the important finance and governance challenges of operating virtual schools, additional research is needed to identify funding and governance practices that will increase accountability, identify efficient and cost-effective best practices, and eliminate profiteering. Given evidence detailed above, we reiterate our recommendations in the 2014 report.

Specifically, we recommend that policymakers and educational leaders:

- Develop new funding formulas based on the actual costs of operating virtual schools.
- Develop new accountability structures for virtual schools, calculate the revenue needed to sustain such structures, and provide adequate support for them.
- Establish geographic boundaries and manageable enrollment zones for virtual schools by implementing state-centered funding and accountability systems.
- Develop guidelines and governance mechanisms to ensure that virtual schools do not prioritize profit over student performance.

Instructional Program Quality

The 2013 and 2014 reports on virtual schools in the United States asserted that accountability procedures for virtual schools must address not only their unique organizational models but also their instructional methods. Quality of content, quality and quantity of instruction, and quality of student achievement are all important aspects of program quality.¹² Here, we again review and update our earlier assertions. Table 1.2 reintroduces issues, assumptions and questions relevant to instructional quality.

Evaluating the Quality of Curricula

Virtual instruction holds the promise of efficient, highly individualized instruction, reaching students who seek access to quality courses. Online education has been referred to as a “disruptive innovation”¹³ and, as has occurred with other disruptive innovations before it, the industry is at the intersection of a growth explosion and a legislative gap. According to one estimate, “extrapolated revenue growth for [the online learning sector] increased from \$73 million to \$178 million between the 2010-11 and 2011-12 school years.”¹⁴ Perhaps to comply with 21st century learning standards that require technological literacy, some states (Michigan, Alabama, West Virginia, Florida and Virginia)¹⁵ now require students to complete at least one online course to graduate, while other states encourage schools to buy digital content rather than textbooks. For example, enacted legislation in North Carolina (NC S 744) states that “Funds appropriated for Digital Learning pursuant to subsection (e) of this section shall be used to support grants to local education agencies (LEAs) for (i) delivering educator professional development focused on using digital and other instructional technologies to provide high-quality, integrated digital teaching and learning to all students and (ii) acquiring quality digital content to enhance instruction.”

Yet, given the variability of digital materials and formats, authorizers face numerous challenges in effectively evaluating course quality and monitoring student learning. Because the online environment is flooded with content developed by various providers—ranging from large for-profit organizations to local districts—and in various formats—ranging from individual courses to full grade-level curricula—authorizers or parents often

Table 1.2. Instructional Program Quality Questions for Virtual Schools

Policy Problem	Assumptions	Empirical Questions
Requiring high-quality curricula	Course content offered through online curricula is an effective means for meeting individualized education goals.	<ul style="list-style-type: none"> • How is the quality of course content best evaluated? • How will the Common Core impact virtual school content and instruction?
Ensuring both quality and quantity of instruction	Instructional seat time is not an accurate measure of learning.	<ul style="list-style-type: none"> • What is the best method of determining learning? • What learning-related factors are different in an online environment? • Should outcomes beyond subject-matter mastery be assessed?
Tracking and assessing student achievement	<p>Students in virtual schools perform equal to or better than traditional peers and existing empirical work has adequately measured student achievement.</p> <p>Modest gains can be taken to scale.</p>	<ul style="list-style-type: none"> • As some states move to student choice at the course level, what do they need to implement quality assurance from multiple providers? • What are effective measures of student achievement? • How does course content affect student achievement?

have difficulty ensuring quality content in the current, highly decentralized environment. While growth in the online industry may serve many students who currently lack access to required, remedial or advanced courses, it leaves states scrambling to understand the trends and to provide proper guidance and legislation. Further, it leaves students, parents and schools uncertain as to the quality of the plethora of online courses. Like curricula in traditional schools, online curricula should be aligned with a designated set of standards to ensure that students’ individualized online learning experiences provide all the information and skills policymakers deem essential. In the 2014 report, we speculated that the centralized Common Core State Standards (CCSS) might be an equalizer to improve authorizers’ ability to evaluate curricula. While the Common Core identifies standards students must meet for states that have signed onto the initiative, it does not dictate the specific curricula that schools must use. For large multi-state online providers, developing courses that meet the Common Core standards rather than the myriad individual state standards might simplify development and evaluation. However, of the 45 states that originally adopted the standards between 2010 and 2011 for implementation by 2015, a legislative scan in 2014 yields at least nine separate bills across seven states aimed at repealing or restricting Common Core implementation. Indiana, Oklahoma and Wisconsin have already repealed or significantly limited Common Core implementation while similar legislation is pending in Ohio. Therefore, the speculation that the Common Core standards

might provide a consistent source by which to evaluate online curricula for all states no longer appears viable.

In the 2014 report, we presented data from the International Association for K12 Online Learning (iNACOL) indicating that states are starting to review online courses to determine alignment with standards and other elements of course quality. For example, Texas has completed this process using the *iNACOL National Standards for Quality Online Courses*,¹⁶ which provide a starting point for assessing internally developed and externally acquired course content. In 2013, states such as Washington, Ohio, Georgia, and Idaho had initiated distance-learning clearinghouses of reviewed and approved online courses.¹⁷ However, such efforts do not appear to have gained significant legislative traction in 2014. Louisiana (S 179) and Virginia (H 1115) enacted legislation relating to course approval, but Arizona failed to pass legislation (AZ H 2555) that would have required the department of education to maintain a master list of approved online courses. Additionally, failed legislation in Georgia (GA H 897) would have funded a clearinghouse as well as new course development and blended learning training for the Georgia Virtual School.

Despite the increase in digital curricula creation and implementation, the legislative scan reveals little progress toward mandated requirements for monitoring quality curriculum in online environments.

Ensuring Quality and Quantity of Instruction

Trends relating to the quality and quantity of virtual instruction that emerged or continued to demand legislative attention in 2014 included: course-level enrollment, blended learning, dual enrollment, proficiency-based learning, and seat time in the virtual education setting.

Course-Level Enrollment: The issues surrounding quality and quantity of instruction may become more complex before they become clearer. A March 2014 report by the U.S. Department of Education confirmed that many traditional high schools across the country do not offer the breadth and depth of courses required for college preparation and admission. For example, nationwide only 50 percent offered calculus while between 10 percent and 25 percent offered no more than one of the core courses necessary in a solid math and science sequence colleges require.¹⁸ Therefore, to fill such unacceptable gaps, traditional schools are turning to online providers and driving growth in course-level virtual enrollment. According to Karen Billings, vice president of the education division for Software & Information Industry Association (SIIA), the education industry will continue to transform with “education divided into smaller and smaller bits of consumption.”¹⁹

A specific avenue for course-level enrollment, Course Access “provides public school students with expanded course offerings across learning environments from diverse, accountable providers. It is a mechanism by which students can gain equitable access to a variety of courses in a programmatic effort to increase access, quality and equity in public education.”²⁰ One element necessary for Course Access is that “the state (or state-approved

entity, or a consortium of states with reciprocity agreements) should maintain a web-based catalog of multiple providers and courses that have been approved based on demonstrated alignment to state academic standards, adherence to national quality standards, and course effectiveness data.”²¹ Further, “the state should monitor the quality of providers based on student growth, proficiency, and course satisfaction survey data from verified enrolled students.”²² While this approach holds promise for monitoring quality as well as student achievement, currently only seven states (Florida, Louisiana, Michigan, Minnesota, Texas, Utah and Wisconsin) have enacted legislation related to some aspects of Course Access policies.²³

Blended Learning: A trend has emerged at the state and district level encouraging the adoption of blended learning, in which students learn content partly through in-class instruction with a teacher and partly through digital or online media. According to Education Elements, “successful blended learning occurs when technology and teaching inform each other.”²⁴ In fact, in testimony to the Pennsylvania House Education Committee in October 2013, one presenter stated, “by 2019, at least 50 percent of high school courses will take place online in some form or fashion.”²⁵ Legislative attention on the topic of blended learning in 2014 included the following:

- Florida legislation (H 7031; enacted) “provides funding for the implementation of the school district’s digital classroom plans.”
- Pending legislation in California (A 2178) “establishes the Blended Learning Pilot Program to explore various models of innovation and documenting best and promising practices in the emerging educational delivery model known as blended learning.”
- Pending legislation in New York (A 8845) “establishes an online learning committee to make recommendations for establishment of a statewide online and blended learning program.”
- Pending Ohio legislation (H 479) “authorizes the establishment of enterprise academy community schools that ... uses blended learning for core subjects.”
- Failed legislation in Tennessee (H 1810) would have created a hybrid learning program funded by federal, state and private funds.

Dual Credit: The proliferation of virtual courses has created greater opportunities for students to earn dual credit for both high school graduation and college credit. Three bills in 2014 addressed this potential trend in education: enacted legislation in Idaho (H 640) directs the Idaho Digital Learning Academy to “work with institutions of higher education to provide dual credit coursework”; South Dakota enacted legislation that clarifies provisions relating to dual education credit; and failed legislation in Missouri (H 1780) would have added “virtual courses to the post-secondary courses that can be offered to high school students participating in dual enrollment classes.”

Proficiency-Based Learning: Affecting both traditional and virtual schools, proficiency-based learning (alternately called competency-based education) is another continuing trend. In the 2014 report, we discussed Maine’s adoption of a proficiency-based learning approach in which “time is the variable and learning driven by rigorous standards is the constant.”²⁶ The Maine Department of Education defines proficiency-based learning as “any system of academic instruction, assessment, grading and reporting that is based on students demonstrating mastery of the knowledge and skills they are expected to learn before they progress to the next lesson, get promoted to the next grade level or receive a diploma.”²⁷ Pending legislation in Ohio (H 479) would authorize enterprise academy community schools that operate on an extended-day, year-round schedule to use a competency-based mastery curriculum model and blended learning for core subjects.

Seat Time: The national focus on higher standards, particularly a greater emphasis on critical thinking with skills driving content, is creating ripple-effect shifts in other facets of K-12 education—especially a shift away from time, based on the Carnegie Unit, as a measure of learning.²⁸ In the 2014 report, we indicated that some states have moved away from “seat time” as an appropriate indicator of student learning, recognizing that simply being at a designated site for a particular number of hours does not guarantee student learning.²⁹ While the question of seat time is still receiving attention, the approach among the states has varied. Arizona failed to pass legislation (H 2555) that would require students and virtual schools to maintain a daily log of time spent on instruction. Mississippi failed to enact legislation (S 2326) that would implement a seat time waiver program or early graduation policy for students who complete accelerated coursework. Meanwhile, Colorado enacted legislation (H 1382) that requires documentation of students’ compliance with compulsory attendance.

While the marketplace for digital curricula is exploding across the country, the legislative scan indicated a division on the overall issue of quality and quantity of instruction in an online environment: states appear to be mandating incorporation of virtual instruction yet are not as attentive to mechanisms to ensure the quality of that content.

Tracking and Assessing Student Achievement

As assessment of student achievement moves from a time-based to a demonstrated mastery-based system, documenting student proficiency becomes a primary concern. Issues requiring policy attention stem from the flexibility inherent in online education and the need for consistent performance evaluations.

State and federal policies that increase demands for demonstrated student achievement make the flexibility of online options provided to students an especially important consideration. State legislation allowing students to choose single courses from multiple providers, or to remain enrolled at a traditional school while supplementing coursework through online providers, generates a significant challenge for monitoring student achievement. State accountability systems must evolve accordingly. Ways must be found, for example, to track the combined accomplishments of students who take advantage of

multiple learning options in a variety of venues. Research questions that arise include how to track outcomes from such varied providers and how to assess the contribution of a specific course to student proficiency.³⁰ Pending legislation in Pennsylvania (S 1388) mandates a study that includes a review of academic accountability methods and systems. And, Vermont passed legislation for tracking student achievement and the effectiveness of various education models. There, H 885 funds an education analyst position in the State Education Agency (SEA) to create tools that decision makers can use to analyze areas including “student test scores, attendance, graduation and continuation rates, demographics, district expenditures by category, and staffing patterns.” The analyst will “assess the return on education dollars based on analysis of opportunities provided, cost-effectiveness, and outcomes for a given level of expenditure.”

Advocates and for-profit companies have claimed that students in virtual schools perform equal to or better than peers in traditional schools.³¹ However, studies indicate otherwise. For example, Stanford University researchers used a matched pair sampling methodology and found that students in virtual charters in Pennsylvania made smaller learning gains over time as compared to both their brick-and-mortar charter and traditional school counterparts.^{32,33} No reputable, comprehensive studies on student performance in virtual schools were published in 2014, further indicating a need for solid research and policy attention in this area. However, 2014 did see some anecdotal indications of student performance, one from an unlikely source. In April, the National Collegiate Athletic Association (NCAA) announced that “24 schools which use a company called K12 Inc. to provide their curriculum were no longer approved.” The Athnet website continues, “In addition to the 24 schools above, other schools affiliated with K12 Inc. remain under Extended Evaluation. This means the NCAA will continue to review coursework coming from those schools to see whether it meets the NCAA’s core course and nontraditional course requirements.”³⁴

Interestingly, perhaps to provide an opportunity to evaluate the current state of online education before approving additional virtual schools, several states introduced legislation in 2014 calling for a temporary moratorium on virtual/charter schools: Illinois (H 3937 enacted), Maine (S 689 vetoed), New Jersey (S 989 pending), and Rhode Island (H 7755 pending).

The legislative scan indicated a moderate focus on enforcing quality standards for student achievement.

Recommendations

While state legislators have increased their focus on digital learning—including but not limited to virtual schools—in 2014, they have still not kept pace with the dynamic online education marketplace. Our overall legislative analysis indicates little continued progress over the past year in proactively addressing issues related to instructional program quality. Based on the preceding analysis, we reiterate our recommendations from the previous two reports. Specifically, we recommend that policymakers and educational leaders:

- Require high-quality curricula, aligned with applicable state and district standards, and monitor changes to digital content.
- Develop a comprehensive system of summative and formative assessments of student achievement, shifting assessment from a focus on time- and place-related requirements to a focus on student mastery of curricular objectives.
- Assess the contributions of various providers to student achievement, and close virtual schools and programs that do not contribute to student growth.

High-Quality Teachers

While virtual schools capitalize on technology in ways that often reduce reliance on traditional classroom teachers, virtual education does not diminish the important role of teachers and, consequently, effective teachers remain a critical component of high-quality instructional opportunities. That said, the research base on virtual school teachers continues to be scarce. While a great deal of research has focused on defining teacher quality in traditional settings,³⁵ little is known about what constitutes teacher quality in virtual schools. In addition, researchers have recognized the importance of teacher education and ongoing professional development as critical investments in teacher effectiveness, but little empirical information exists to guide the preparation and professional development of teachers in virtual settings. Finally, recent research has

Table 1.3. Teacher Quality Questions for Virtual Schools

Policy Problem	Assumptions	Empirical Questions
Recruiting and training qualified teachers	<p>Instructional training and professional support tailored to online instruction will help recruit and retain teachers.</p> <p>Effective teaching in a traditional environment easily translates to an online environment.</p> <p>Teacher preparation programs and district professional development programs will re-tool to support online instruction demands.</p>	<ul style="list-style-type: none"> • Can sufficient numbers of qualified online teachers be recruited and trained to ensure the ability of virtual education to offer new opportunities to rural or underserved populations? • Which professional skills and certifications for online teachers are the same as for traditional teachers? Which are different? • What professional development is relevant for online teachers?

Evaluating and retaining effective teachers	<p>Evaluation of online teachers can mirror that of teachers in traditional settings.</p> <p>Online teachers can support a large roster of students.</p>	<ul style="list-style-type: none"> • How well do evaluation rubrics for traditional settings translate to an online environment? • How much direct attention and time is necessary for a student to receive adequate instructional support? What are the implications for teaching load?
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provided evidence on the distribution of effective teachers across different types of schools and districts, yielding findings that inform policies related to teacher supply, recruitment, and retention in traditional schools; however, no parallel evidence is available for staffing virtual schools with effective teachers. In short, while a growing body of research exists to guide teacher policy decisions in traditional schools, little evidence exists on the knowledge and skills of effective virtual school teachers, or the policies and practices that may prepare, recruit, and retain quality teachers in those settings.

Our reports in the last two years identified several policy issues, assumptions, and empirical questions that need to be answered (see Table 1.3). We revisit those topics in this segment and discuss new developments, focusing on the minimal progress state legislatures have made over the last year and the areas that still need attention.

Recruiting and Training Qualified Teachers

In our previous reports, we recognized that “the shift from a traditional classroom to a virtual setting requires sufficient numbers of new and experienced teachers who are motivated and prepared to engage in online instruction.”³⁶ One promise of virtual education is that it expands educational opportunities for students beyond what can be offered in traditional brick-and-mortar schools. However, realizing equal opportunity through online instruction requires preparing, recruiting and supporting an adequate supply of qualified teachers who are interested in teaching in an online environment.

Many unanswered questions continue to surround the issue of online teachers. Who chooses to teach in virtual schools and why? Are virtual schools attracting the teachers they want and need? What qualifications, skills and attributes are associated with effective teaching in a virtual school? How can teacher education programs prepare teachers for virtual education? How are states promoting and supporting these teacher education programs? Research is needed to identify characteristics of effective online teachers and to determine mechanisms to recruit and support teachers who will thrive in an online environment.

The empirical evidence on who chooses to teach in a virtual setting and why, unfortunately, has not evolved to keep pace with the expansion of virtual schools across states. In fact, 2014 offered no new legislation regarding research to delve into these unanswered questions about teachers in virtual programs. It seems the academic realm may need to take the lead—without legislative mandate—on conducting effective research to better understand these questions surrounding online teachers.

We previously reported how some traditional teacher preparation programs had responded to state legislation that requires special attention to online teaching. However, in 2014, legislation across the states did not provide clear guidance for preparation programs as to future trends in requirements for certification. For instance, Florida (H 433) enacted legislation that addresses teacher certification in all schools, including its virtual options. However, this legislation is focused on those who certify teachers, rather than on the teachers themselves. It requires instructional personnel who supervise student teaching of both traditional and online future instructors to meet certain requirements, including having received “clinical educator” training, holding a valid professional certificate, and having at least three years of teaching experience. Other legislation addressing teacher qualifications has been mixed, with mixed outcomes. Failed legislation in Florida (H 7083) would have required virtual instructors teaching a blended learning course to hold an active state or school district adjunct certification in the appropriate subject area. Legislation enacted in Utah (S 258) identifies certain circumstances that exempt an online teacher from having to obtain a license. However, legislation enacted in North Carolina (S 744) requires all teaching staff in virtual schools to hold appropriate state certification. And, enacted legislation in Louisiana (S 179) requires the state board to maintain a reciprocal teacher certification process for teachers who reside in other states but who are employed by authorized course providers.

There has been little progress toward requirements for the preparation, certification, and licensure of online teachers

Beyond initial preparation, ongoing professional development is essential to keep all teachers current on curriculum and instructional practice and to retool teachers for new assignments. Professional development may be even more essential for teachers who have chosen to move into online

environments because technological devices and software change so rapidly. While many virtual schools have recognized the importance of professional development for their teachers and do provide ongoing training, some states require that online schools offer professional development specifically designed for online instructors.³⁷

None of the legislative developments in 2014 focus strictly on professional development requirements for virtual schools. Enacted Senate bill 622 in Louisiana, while not limited to virtual programs, provides training and ongoing professional development to ensure that teachers are adequately prepared to use technology infrastructure, software, data management and online resources. A pending bill in Michigan (S 838) focusing on effective integration of digital learning into curricula and instruction would provide extensive professional development to at least 500 educators. The legislature would then require a report identifying barriers and other opportunities to encourage the adoption of digital learning in the public education system. And enacted legislation in Florida (S 850) will require the Department of Education to disseminate web-based professional development materials aimed at increasing blended learning instruction in classrooms

Except for minimal recognition that online teachers need preparation that may differ from traditional preparation, overall our legislative analysis provided little evidence of positive trends. There has been little progress toward requirements for the preparation, certification, and licensure of online teachers; and, although there has been some attention to the need for ongoing professional development of teachers in virtual environments, there has been no specific progress. That said, the research base on the knowledge, skills, and abilities that make online teachers effective is thin. More evidence is needed to guide these efforts. In addition, too little attention has been given to estimating the demand for online teachers. More research is needed to determine how many online instructors will need to be recruited and prepared in the near future to meet the projected demand.

Evaluating and Retaining Effective Teachers

As described in previous reports, “Teacher evaluation and retention are both critical to the development and success of the nascent virtual schooling industry. Ensuring that online teachers are effective requires appropriate assessment.”³⁸ The issue of teacher evaluation is not unique to virtual schools; it has become a major focal point of research and policy in brick-and-mortar schools. Currently, the two dominant approaches for gauging teacher effectiveness are (1) standards based evaluations that use established rubrics to observe and evaluate teachers’ performance in the classroom,³⁹ and (2) value-added measures that are based on growth in the standardized test scores of a teacher’s students. In some cases, the two approaches are used in tandem. This is often the case in a high-stakes policy environment in which teacher pay, placement, or continued employment is based on performance.⁴⁰ While the evidence base on teacher evaluation in traditional classrooms is growing, little is known about how to evaluate teachers in a virtual setting. School leaders and policymakers must consider how well teacher evaluation systems designed for traditional settings translate to a virtual context, and it is likely that neither of the tools described above will easily transfer. While evolving efforts across states are increasing attention to the importance of teacher quality, states do not appear to be tailoring teacher evaluation policy to the specific demands of teaching in a virtual environment. In fact, our analysis revealed no new proposed legislation in 2014 relevant to this area.

This gap in evidence and in legislative attention should be of great concern, not only because of its implications for instructors who teach in full-time virtual schools, but also because of its implications in light of the explosion of digital media in traditional classrooms. Without evidence-based research to identify effective assessments of online teaching and clear legislative guidelines supporting their implementation, ensuring effective teaching within the burgeoning digital curricula marketplace—not only for virtual schools but also for blended learning programs and for supplemental digital curriculum in the traditional classroom—will remain especially challenging.

In relation to teacher retention, our previous report focused on teachers’ satisfaction with teaching in virtual schools and examined whether teacher satisfaction may serve as a key predictor of teacher retention.⁴¹ We reported that teaching load is a clear and consistent policy-relevant factor related to teacher satisfaction in virtual settings.⁴² Our 2014

legislative analysis reveals that only Arkansas enacted legislation that addressed school size (AR SB48, limiting virtual charter school total student enrollment to 3,000 students), but no state has addressed pupil-teacher ratios in virtual schools, which continue to be high in comparison to brick-and-mortar schools.

Overall, then, our legislative analysis reveals little activity around the thorny but important issues of evaluating and retaining effective teachers in virtual schools. However, pending legislation in New Jersey (SR 29) expresses support for traditional classroom teaching conducted by highly qualified instructors. The bill states that while virtual learning programs can be useful supplemental tools, they should not replace an effective teacher in a classroom. Contrasted with the growth in virtual education, perhaps this statement serves as an indicator on the lack of unity and clarity that exists in the legislative realm regarding oversight of virtual programs.

Recommendations

Based on our legislative analysis, we conclude that little progress has been made over the past year on issues related to teacher quality in virtual contexts. Given the information and experiences detailed above, we reiterate our recommendations from last year's report. Specifically, we recommend that policymakers and educational leaders:

- Define new certification training and relevant teacher licensure requirements⁴³ and continually improve online teaching models through comprehensive professional development.
- Address retention issues by developing guidelines for appropriate student-teacher ratios.
- Work with emerging research to create effective and comprehensive teacher evaluation rubrics.

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- Perrachione, B., Rosser, V., & Petersen, G. (2008). Why do they stay? Elementary teachers' perceptions of job satisfaction and retention. *The Professional Educator*, 32(2).
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Section II

Limited Evidence, Little Guidance: Research to Guide Virtual School Policy

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Executive Summary

Section II reviews research relevant to virtual schools. Even though every year yields more research publications on both supplemental and full-time virtual schooling, a lack of evidence to guide related practice and policy persists. Making the situation worse is that much of what is published appears in journals that virtual schooling practitioners and scholars do not routinely associate with the broader fields of distance education and educational technology. The result is that too many published studies go unnoticed, often for years after publication, by the research community—and by those responsible for making education policy.

This is particularly true of research related to the regulation and legislation of virtual schooling, which appears not only in publications focused on education policy and school law but also in those with a more general focus on politics, governance, and law. And, still more information that may not gain widespread attention comes from numerous government, think tank, and policy center briefs and reports. It is for these reasons that the NEPC annual reports continue to provide updates on literature and research related to virtual schooling policy, capturing what has been published in the previous 12 months and incorporating information from lesser known outlets.

Even when relatively obscure publications and other reports from this broad spectrum of sources are added to research published since our last report, there is still little empirical research to guide the practice and policy of virtual schooling. More than twenty years after the first virtual schools began, there continues to be a dearth of empirical, longitudinal research to guide the practice and policy of virtual schooling. Based on our analysis, this section concludes again that despite considerable enthusiasm for virtual schooling in some quarters (particularly for full-time virtual schools), there is little high quality research that supports it or that justifies ongoing calls for expansion of full time virtual programs.

Recommendations arising from Section II include that:

- Policymakers regulate the growth and geographic reach of full-time, taxpayer-funded virtual schools. At present there are serious questions about the effectiveness of many models of virtual schooling. Until these questions can be adequately addressed, policymakers should focus their efforts on promoting virtual

school models that have shown to be successful, while limiting those models that have resulted in questionable student performance.

- State and federal policymakers create long-term programs to support independent research on and evaluation of virtual schooling, particularly full-time virtual schooling. The most critical research issues include: how to determine accurate costs for virtual schooling; how to assess proposals for virtual schools and their ongoing performance; how to identify good teaching and prepare good teachers for this context; and, how the business model of for-profit virtual schooling (including alternative management arrangements) affects the quality of online learning experiences.

Section II

Limited Evidence, Little Guidance: Research to Guide Virtual School Policy

Introduction

Virtual schooling has been around for approximately twenty-five years, but related research literature has not kept pace with its growth. In the first major literature review of K-12 distance education, Kerry Rice wrote that “a paucity of research exists when examining high school students enrolled in virtual schools, and the research base is smaller still when the population of students is further narrowed to the elementary grades.”⁴⁴ Three years later, Barbour and Reeves wrote that “there has been a deficit of rigorous reviews of the literature related to virtual schools.”⁴⁵ Six years ago, Cavanaugh, Barbour, and Clark described the current state of virtual schooling research as:

indicative of the foundational descriptive work that often precedes experimentation in any scientific field. In other words, it is important to know how students in virtual school engage in their learning in this environment prior to conducting any rigorous examination of virtual schooling.⁴⁶

It has been nine years since Rice’s initial assessment, and the state of research into K-12 online learning has not changed.

While there has been some improvement in what is known about supplemental K-12 online learning, there continues to be a lack of reliable and valid evidence to guide full-time online practice and policy. For example, in their review of the literature related to such programs, Hasler, Waters, Barbour and Menchaca wrote that “a handful of reports outlined concerns with the way these online charter schools were being managed and the lack of accountability required of these fledgling schools. There was relatively little evidence that proved that these schools could achieve academic ratings similar to their traditional counterparts.”⁴⁷

While the amount of published research continues to increase, and the variety of research questions continues to broaden, much of the research into virtual schooling continues to be descriptive or exploratory.⁴⁸ While such research has potential to impact the practice of virtual schooling, often it applies only in limited contexts. There continues to be too little reliable a research available to guide practitioners and policymakers. In the following sections, we discuss available information and notable gaps in the areas of: finance and governance, instructional program quality, teacher quality, and for-profit educational management organizations (EMOs).

Finance and Governance

Section I of this report discussed several issues related to the financing and governance of virtual schools (including linking funding to actual costs, identifying accountability structures, delineating enrollment boundaries and funding responsibilities, and limited profiteering by EMOs). Unfortunately, this is an area where limited research exists that can provide guidance to policymakers.

As noted in Section I, one of the difficulties related to the issue of financing virtual schooling is the fact that it is a challenge to identify the actual or exact costs of virtual schools.⁴⁹ To

Table 2.1. Literature Focused on Funding Virtual Schools

Reach	Date	Literature
CO	2004	“...cost per student [of cyber schooling] is not enormously higher than for in-class students. Over time, cyber education will become substantially more cost-efficient.” ⁵⁰
OH	2005	...actual cost of the five existing full-time online charter schools was \$5382/student, compared to \$8437/student for traditional public brick-and-mortar schools. ⁵¹
National	2006	“...the operating costs of online programs are about the same as the operating costs of a regular brick-and-mortar program.” “...[analysis] excluded schools’ capital expenses and transportation costs from their brick-and-mortar estimates; had those costs been included “the costs of operating virtual schools would have been less per pupil than brick-and-mortar schools.” ⁵²
FL	2007	...Florida Virtual School to be \$284 more cost effective than brick-and-mortar education in 2003-04, and \$1048 more cost effective by 2006-07. ⁵³
GA	2010	...able to meet Annual Yearly Progress in 2009-10 with 65% of the funding provided to traditional schools, or \$3500/student. ⁵⁴
WI	2010	...able to operate its full-time online charter schools at 65% of traditional funding, or \$6,480/student. ⁵⁵
MI	2012	...it cost 16% less in 2009-10 and was projected to cost 7% less in 2010-11 to provide full-time online learning than to provide traditional schooling. ⁵⁶
National	2012	...full-time K-12 online learning costs between \$5,100/student and \$7,700/student—or between 51% and 77% of the cost of traditional brick-and-mortar schooling. ⁵⁷

date, proponents of virtual schooling have generally argued that online schools should be funded at equal levels to brick-and-mortar schools. Fortunately, one of the few areas where

some literature does exist is the issue of the financing of virtual schooling. Last year's report discussed this body of literature, which is summarized in Table 2.1.⁵⁸

As Table 2.1 illustrates, the majority of literature has found that virtual schools can provide students with an education at a lower cost than brick-and-mortar schools. The question of whether they can provide equal *quality* for less cost is discussed in the following section—and if they cannot, then one could argue for equal funding. Lesser funding does appear to be typical practice in the United States. For example, the International Association for K-12 Online Learning (iNACOL) reported that many states funded virtual schools at 30-50% less than brick-and-mortar schools, specifically finding that the national average per pupil funding for virtual schooling was approximately \$6,400, while per pupil funding for brick-and-mortar schools averaged \$11,282.⁵⁹ However, iNACOL—which is a professional association focused on ensuring that all K-12 students have access to blended and online learning⁶⁰—has argued that “online schools should be funded within the range of brick-and-mortar school operating costs in each state.”⁶¹

Unfortunately, beyond the issue of the funding provided to virtual schools, the research into the financing and governance of virtual schools is limited. There is a growing body of literature available, but the vast majority of this literature has been produced by organizations like iNACOL,⁶² Evergreen Education Group,⁶³ and the Foundation for Excellence in Education.⁶⁴ However, as Molnar indicated in the last report in this NEPC series, Evergreen assumes “the value of virtual education and the desirability of its expansion,” while the Foundation for Excellence in Education is described as “clearly part of an advocacy campaign sponsored by the digital education industry and its supporters.”⁶⁵

There have only been a few references to governance in the academic literature. However, almost all of these have been reviewing existing practices or outlining areas that required regulatory action and/or oversight. For example, as early as 2003 Kathryn Kraft outlined the legislative issues that cyber charter schools were facing and would face in the future. Over a decade ago, Kraft provided the following advice to state legislators drafting virtual school legislation:

First, the state must address how the creation of cyber charter schools will differ from that of brick-and-mortar charter schools. Second, a state must address how and when a cyber charter school would be exempt from the educational provisions that apply to brick-and-mortar charter schools and traditional public schools. Finally, the state should address the evaluation process for cyber charter schools.⁶⁶

Similarly, in a policy brief by the Center for Evaluation and Education Policy published in 2006, the authors outlined three policy areas that the State of Indiana would need to consider as the legislature in that state was debating virtual charter schools (funding cross-district enrollment and enrollment of formerly homeschooled students, accountability for student performance and program quality, federal and state compliance

for serving special education students).⁶⁷ Yet 11 years later, and as indicated in Section I, many states still do not have legislative or regulatory regimes to address these issues.

In 2010, Brady, Umpstead, and Eckes reviewed the legislative landscape of virtual charter schools and found that at least 21 states had legislative language related to virtual charter schools or virtual instruction within charter schools, and another four states had virtual charter schools in operation (even though there were no provisions to allow for their creation in any legislation).⁶⁸ The authors also reported that one of the challenges facing legislative guidance for virtual charter schools was the fact that many laws had specific references to dated terminology, using examples such as distance education in New Hampshire or correspondence education in Alaska. According to the authors, this use of dated terms was indicative of ambiguous guidance for virtual charter schools operators because these regulations were generally written before the advent of virtual schooling. Based on their review, Brady, Umpstead, and Eckes recommended that states should pass legislation that outlined criteria for four areas:

1. States that operate cyber charter schools must provide a comprehensive definition of what constitutes online schools and programs;
2. State must detail adequate and sustainable funding systems for cyber charter schools;
3. States with cyber charter schools must include standards associated with monitoring the expectations; and
4. States must create accreditation requirements for cyber charter schools.⁶⁹

Five years later, as Section I has illustrated, most states have yet to legislate how virtual charter schools are defined, financed, held accountable, and approved.

However, it should be noted that even when research and data exist to help guide legislators and policymakers, for-profit EMOs often lobby to circumvent decisions based on that data. For example, Fang reported how a lobbyist for one of the two main virtual for-profit EMOs helped to draft the initial legislation that created virtual charter schools in Tennessee,⁷⁰ and two years later Sisk reported that in the face of student results that “fell far short of state expectations for the second year in a row” that lobbyist blocked efforts to limit the growth or shut down this failing program.⁷¹ This is just one example of the influence of lobbyists on the legislative process within the field of virtual schooling. In her seminal *New York Times* article, Saul was one of the first in the media to question the role of for-profit EMO lobbying within the virtual schooling environment, using Pennsylvania as an example in this news item.⁷²

In another example of legislators ignoring data to expand virtual charter schools, in 1999 Michigan banned virtual charter schools after a case of extreme corruption between one school district and a for-profit provider.⁷³ A decade later, the legislature passed *Public Act 205*, which lifted the ban on virtual charter schools and allowed two companies to each create one full-time program. Each of these virtual charter schools was limited to 400 students in the first year and an additional 1000 students in second year (but for each

regular education student that registered, they were required to enroll one student from the State's drop out roll).⁷⁴ At the end of two years, the Department of Education would determine future enrollment limits based on the performance of the programs in those first two years. The student performance during those first two years on the state's Michigan Education Assessment Program (MEAP) for both virtual charter schools is illustrated below.

Table 2.2. MEAP Results for the Michigan Connections Academy (MICA) and Michigan Virtual Charter Academy (MVCA)

MEAP	MICA 2010	MVCA 2010	Statewide 2010	MICA 2011	MVCA 2011	Statewide 2011
Gr 3 - Math	44.0%	14.3%	35%	42.2%	26.3%	36%
Gr 3 - Reading	75.0%	66.7%	63%	64.4%	55.3%	62%
Gr 4 - Math	23.7%	40.0%	40%	37.8%	20.5%	40%
Gr 4 - Reading	71.0%	66.7%	64%	82.2%	56.4%	68%
Gr 4 - Writing	36.8%	48.4%	47%	37.8%	25.6%	45%
Gr 5 - Math	13.9%	32.0%	30%	33.3%	36.8%	40%
Gr 5 - Reading	72.2%	68.0%	65%	77.8%	60.5%	69%
Gr 5 - Science	8.3%	8.0%	17%	18.5%	19.4%	15%
Gr 6 - Math	18.9%	20.0%	36%	19.0%	22.0%	37%
Gr 6 - Reading	75.7%	66.7%	63%	83.3%	70.7%	67%
Gr 6 - Social Studies	21.6%	20.0%	28%	21.4%	26.2%	28%
Gr 7 - Math	34.6%	14.7%	36%	36.2%	34.4%	37%
Gr 7 - Reading	73.1%	47.1%	56%	59.6%	57.4%	60%
Gr 7 - Writing	50.0%	35.3%	48%	38.3%	34.4%	47%
Gr 8 - Math	18.8%	19.1%	29%	-	-	29%
Gr 8 - Reading	65.6%	66.7%	56%	-	-	61%
Gr 8 - Science	12.5%	9.6%	15%	-	-	16%
Gr 9 - Social Studies	34.7%	-	33%	28.1%	24.6%	29%

Areas where the virtual charter schools performed below the statewide average are indicated in italics

As Table 2.2 highlights, in 2010 both MICA and MVCA performed at relatively average levels (i.e., MICA scored lower than the statewide average in 9 of 18 categories, and MVCA scored lower than the statewide average in 9 of 17 categories). However, in 2011 MICA performed lower than the statewide average in 9 of 15 categories and MVCA performed lower than the statewide average in 13 of 15 categories. Yet in the spring of 2012, with no clear benefit and an apparent decline in performance, and only months before the review from the Department of Education would have occurred, the legislature moved to remove all meaningful restrictions on the number and enrollment levels of virtual schooling in the state. *Senate Bill 619* removed the cap on the number of virtual charter schools and limited enrollment for each virtual charter school to 2,500 students in the first year, 5,000 students in the second year and 10,000 students after the second year.⁷⁵ Essentially, in the face of data indicating uncertainty about whether existing virtual charter schools in Michigan were providing a quality instructional program sufficient to allow students to perform even at an average level, the legislators decided to expand these programs.

Five years ago Brady, Umpstead, and Eckes recommended that states needed “a more explicit approach in the laws governing the creation and operation of cyber charter schools.”⁷⁶ Further, some three years ago, in the introduction to an issue of the *Peabody Journal of Education* focused on educational governance and policy, Manna wrote:

Virtual schooling raises several policy and governance issues for states such as defining the virtual school population for purposes of allocating state funding; certifying virtual teachers...; maintaining academic honesty and integrity of virtual learning models so that the inevitable cheating or other scandals that occasionally emerge do not sink the entire enterprise; and, last, helping parents understand the comparative quality of virtual schools, just as current accountability systems try to assign marks to traditional brick-and-mortar institutions. There are incredibly challenging and important issues in state leaders’ hands, and they become potentially even more complicated when virtual models are proposed as charter schools. In some states, charter school policy remains in a relatively immature form, even though that model of schooling has existed in some places since the early 1990s. Policies and oversight mechanisms that may seem appropriate for traditional public schools or charter schools may be infeasible in virtual settings yet relatively understaffed state education agencies nevertheless must address these emerging issues.⁷⁷

It is disappointing to report that nearly all such issues—noted in this report series and in other calls for better policies—remain unresolved.

To recap: while some proponent organizations argue for equal funding for virtual schools, the literature has consistently found virtual schooling is less expensive to provide than traditional brick-and-mortar schooling. Beyond this issue, research into the financing and governance of virtual schools is limited. However, even in instances where there has been data to guide policymakers, that data is often ignored due to lobbying by for-profit EMOs or ideological legislators.⁷⁸

Instructional Program Quality

More research is evident in the area of quality of online instruction, with studies typically examining student performance—one of the few measures available to gain insight into

Table 2.3. Literature Focused on Student Performance in Full-Time Virtual Schools

Sample	Finding
CO	“Online student scores in math, reading, and writing have been lower than scores for students statewide over the last three years.” ⁷⁹
OH	...online charter school students experienced significantly lower achievement gains compared to brick-and-mortar charter schools in the state. ⁸⁰
WI	“Virtual charter school pupils’ median scores on the mathematics section of the Wisconsin Knowledge and Concepts Examination were almost always lower than statewide medians during the 2005-06 and 2006-07 school years.” ⁸¹
CO	“Half of the online students wind up leaving within a year. When they do, they’re often further behind academically than when they started.” ⁸²
MN	“Compared with all students statewide, full-time online students had significantly lower proficiency rates on the math MCA-II but similar proficiency rates in reading.” ⁸³
AZ	“[N]early nine of every 10 students enrolled in at least one statewide online course, all had graduation rates and AIMS math passing rates below the state average” ⁸⁴
OH	Online charter schools “rank higher when looking at their ‘value-added’ progress over one year rather than simply measuring their one-time testing performance.” ⁸⁵
OH	“[N]early 97 percent of Ohio’s traditional school districts have a higher score than the average score of the seven statewide” online charter schools. Those schools in Ohio also underperformed brick-and-mortar schools in graduation rates. ⁸⁶
PA	100% of these online charter schools performed significantly worse than feeder schools in both reading and math. ⁸⁷
AR	...online students performed at levels comparable to their face-to-face counterparts in six out of eight measures, and on the remaining two measures online students outperformed their face-to-face counterparts at a 0.10 statistically significant level. ⁸⁸
National	“...students at K12 Inc., the nation’s largest virtual school company, are falling further behind in reading and math scores than students in brick-and-mortar schools.” ⁸⁹

program quality. The general assumption has been that if students in the online environment perform comparably to their brick-and-mortar counterparts, then the online programs have sufficient instructional quality.

To date the findings on student performance in full-time virtual contexts has been mixed, although the majority have found that full-time online students do not perform as well as their brick-and-mortar counterparts (see Table 2.3).

As Table 2.3 illustrates, with the exception of isolated studies in Ohio and Arkansas, the literature—mostly legislative audits and investigative journalism—has found that students enrolled in full-time virtual schools do not perform as well as students enrolled in brick-and-mortar settings. Further, most of those studies that have found gains for full-time virtual school students have suffered from ideological bias or methodological limitations.⁹⁰

The picture changes for student performance in supplemental virtual school environments—although there is a notable methodological issue in this research. Table 2.4 provides a sampling.

Table 2.4. Literature Focused on Student Performance in Supplemental Virtual Schools

Literature	Finding
Bigbie & McCarroll	...over half of students who completed FLVS courses scored an A in their course & only 7% received a failing grade. ⁹¹
Cavanaugh	...effect size slightly in favor of K-12 distance education. ⁹²
Cavanaugh <i>et al.</i>	...negative effect size for K-12 distance education. ⁹³
Cavanaugh <i>et al.</i>	FLVS students performed better on a non-mandatory assessment tool than students from the traditional classroom. ⁹⁴
McLeod <i>et al.</i>	FLVS students performed better on an algebraic assessment than their classroom counterparts. ⁹⁵
Means <i>et al.</i>	...small effect size favoring online cohorts over face-to-face cohorts based on limited K-12 studies. ⁹⁶
Chingos & Schwerdt	FLVS students perform about the same or somewhat better on state tests once their pre-high-school characteristics are taken into account. ⁹⁷

As Table 2.4 suggests, much research on student performance in supplemental virtual environments found that online students did as well or better than their brick-and-mortar

counterparts. However, within the research literature it was generally understood that samples were often skewed in favor of the online student cohort⁹⁸—though proponent professional associations typically ignored this factor.⁹⁹

Typical descriptions of students completing supplemental work illustrates such skewing, as Table 2.5 indicates.

Table 2.5. Literature Focused on Student Characteristics in Supplemental Virtual Schools

Literature	Finding
Kozma <i>et al.</i>	“...vast majority of VHS students in their courses were planning to attend a four-year college.” ¹⁰⁰
Espinoza <i>et al.</i>	“VHS courses are predominantly designated as ‘honors,’ and students enrolled are mostly college bound.” ¹⁰¹
Roblyer & Elbaum	“...only students with a high need to control and structure their own learning may choose distance formats freely.” ¹⁰²
Clark <i>et al.</i>	“IVHS students were highly motivated, high achieving, self-directed and/or who liked to work independently.” ¹⁰³
Mills	“...typical online student was an A or B student.” ¹⁰⁴
Watkins	“...45% of the students who participated in e-learning opportunities in Michigan were either advanced placement or academically advanced students.” ¹⁰⁵

The online students sampled in comparisons of student performance between supplemental virtual schools and their brick-and-mortar counterparts were simply better students.¹⁰⁶ As Rice concluded “that the effectiveness of distance education appears to have more to do with who is teaching, **who is learning**, and how that learning is accomplished, and less to do with the medium” (emphasis added).¹⁰⁷ Clearly there is a deficit in the performance of virtual school students when a full range of students are included in the online cohort, as is seen from the results of the research literature on student performance in full-time virtual schooling.

In addition to student performance, other indicators of program quality are embedded in various types of evaluation and approval processes for virtual schools. In a study of this area, the Michigan Virtual Learning Research Institute described a variety of regulatory regimes based on the variables depicted in Table 2.6.¹⁰⁸ As is evident from this overview, a wide variety of variables can be combined in a number of ways, indicating that there is little agreement about reliable processes for approving and evaluating virtual schools. Providers or courses can be approved, for example, either with no monitoring, ongoing monitoring or annual monitoring of performance. Given the number of interactive

variables, it's clear no agreement has yet been reached on best regulatory approaches to ensuring quality instruction.

Table 2.6. Variables Related to the Evaluation and Approval Process for Virtual Schools

Level of Evaluation and Approval		
Provider level	Course level	
Approval Requirement		
Optional approval	Required approval	
Geographic Reach		
Multi-district	Multi-district & single district	Single district
Delivery Model		
Fully online	Blended	
Evaluation and Approval Procedures		
Front-end approval	Front-end approval & ongoing monitoring	Annual monitoring / audits

In addition to student performance, other indicators of program quality are embedded in various types of evaluation and approval processes for virtual schools. In a study of this area, the Michigan Virtual Learning Research Institute described a variety of regulatory regimes based on the variables depicted in Table 2.6.¹⁰⁹ As is evident from this overview, a wide variety of variables can be combined in a number of ways, indicating that there is little agreement about reliable processes for approving and evaluating virtual schools. Providers or courses can be approved, for example, either with no monitoring, ongoing monitoring or annual monitoring of performance. Given the number of interactive variables, it's clear no agreement has yet been reached on best regulatory approaches to ensuring quality instruction.

And yet, calls for an evaluation process to monitor instructional quality in virtual schools have been heard for over a decade. For example, in 2003 Kraft wrote that:

Cyber charter schools should be evaluated on several grounds. First, their compliance with applicable laws should be evaluated. Second, cyber charter schools should be required to provide an accounting of their funding and expenses. Finally, cyber charter schools should be required to demonstrate their progress.”¹¹⁰

Interestingly, more than a decade later, a 2014 Michigan Virtual Learning Research Institute report indicated that based on the most recent data available at the time, only 31 of the 50 states had any formal evaluation or approval process beyond the same measures

used to evaluate brick-and-mortar schools.¹¹¹ And of those 31 states, the majority had a primarily front-end approval process—meaning that once a course or program was initially approved, either by the state or some external accreditor, there was no mechanism in place to ensure that courses or programs continuously provided a quality instructional program.

Teacher Quality

Section I authors describe two policy issues surrounding high quality teachers: recruiting and training qualified teachers, and evaluating and retaining effective teachers. This area yields some research, but much of it continues to be context specific or methodologically limited.¹¹² For example, in an effort related to teacher training, DiPetro, Ferdig, Black, and Preston reported 37 best practices in virtual school teaching based on interviews with 16 teachers identified as effective by their administrators; however, the study lacked verification that the teachers actually implemented the practices or that the practices affected student outcomes.¹¹³ This is not to suggest that this study is an example of poor research, simply that the practices identified are likely to be useful only for new and struggling teachers at that particular virtual school or in virtual schools serving similar student populations; in addition, a link between the practices and student outcomes needs to be established. Essentially, this study provides an example of research that is both context specific (that is, it applies primarily to the specific virtual school studied) and methodologically limited (that is, it relies on interviews without other methods of data collection/verification).

One of the primary challenges facing virtual schools—at least as it relates to staffing—is developing a pool of potential online teachers who already possess the skills necessary to provide and support instruction in a virtual school environment. There are still only a relatively small number of college and university programs throughout the country that provide pre-service or in-service training on teaching in a virtual school environment.¹¹⁴ In fact, Kennedy and Archambault found that less than 2% of colleges and universities provided any content related to virtual schooling in their pre-service or in-service teacher programs.¹¹⁵ Further, Rice and Dawley found that less than 40% of virtual school teachers reported receiving any professional development before they began teaching online.¹¹⁶ Nor do states appear to provide substantive support in this area. For example, although Wisconsin became one of the few states to require that virtual school teachers have at least 30 hours of professional development before teaching online—effective as of 2010¹¹⁷—that legislative requirement was repealed in 2013.

Given these realities, it is generally up to the virtual schools themselves to provide their teachers with professional development to ensure that they become highly qualified online teachers. One example of a virtual school’s professional development program for its online teachers is the VHS Collaborative (formerly the Virtual High School). The collaborative requires all teachers in partner schools who are interested in providing online instruction to complete an online course in relevant methodology.¹¹⁸ Additionally, all potential online course developers must complete an online course in designing online instruction. Teachers have the opportunity to earn graduate credits for completing these

courses through partner institutions, including Plymouth State University, Endicott College, and Framingham State University.¹¹⁹ Most virtual schools offer their own teacher training in face-to-face or online formats, prior to their first online assignment as well as on an on-going basis.¹²⁰

The Evergreen Education Group has proposed one possible solution to the teacher training issue in a policy brief entitled *Teaching Online Across State Lines*.¹²¹ Its purpose was to “explore key teacher licensing issues, and [propose] an online teacher specialization that would allow a licensed teacher to teach online students in multiple states.” As a part of that exploration, the authors made the following recommendations:

All online teachers should be highly-qualified, licensed teachers. In addition, states should create an online teaching specialization that would allow a teacher licensed in any state to teach online students in any state without having to go through a separate licensure process in each state. This specialization would be based on online teachers meeting both of the following requirements:

- A. They demonstrate that they are licensed and highly qualified in any state, and
- B. They demonstrate expertise in teaching online via either of two methods:
 - They have taken and passed a professional development course in teaching online by an approved provider, which includes a course specific to teaching in an online environment offered by universities, regional education agencies, or national providers of accredited programs, or
 - They have successfully taught in an accredited online program for at least three years.

The creation of an online teacher specialization raises the bar for teachers who are licensed in another state, by requiring that these teachers must demonstrate that they have taken and passed a professional development course that meets state requirements or confirm they have successfully taught in an accredited online program. This approach preserves the approach to teaching online used by many individual school districts without imposing any new mandates. Licensed teachers in a district may shift to teaching online with no additional state-created requirements.¹²²

This kind of model is not without precedent. For example, Georgia and Idaho currently offer specific K-12 online teaching endorsements¹²³; however, endorsements are still voluntary for online teachers in both states. Essentially, the proposal from the Evergreen Education Group is to extend these kinds of endorsements nationally, in much the same way that the National Board for Professional Teaching Standards created a certification program that teachers could complete and become nationally certified.

Another challenge facing virtual schools is the evaluation of online teaching in the absence of reliable and valid research to support high quality practice.¹²⁴ At present, eight states have adopted some form of online teaching standards and/or created some form of teacher certification for online teaching (Georgia, Idaho, Michigan, Louisiana, South Carolina, South Dakota, Utah, and Vermont).¹²⁵ In most instances, the adopted standards have been iNACOL's *National Standards for Quality Online Teaching*.¹²⁶ Unfortunately, they have not undergone the typical process for standards development, which generally includes three stages.¹²⁷ The first stage is to conduct a systematic literature review and then develop draft standards based upon sound research.¹²⁸ The second stage is to solicit the input from experts in the field on the draft standards; often, several rounds of expert feedback help refine the standards. The final stage is to translate the standards into a rubric for practitioners use. Researchers train individuals to use the rubric and then assess whether it is reliable when used independently—that is, whether inter-rater reliability is documented.¹²⁹

The initial iNACOL *National Standards for Quality Online Teaching* were adopted in 2007 after a “literature review of the existing online teaching quality standards, then...a cross-reference of standards, followed by a survey completed by representatives of the iNACOL network...” The result was that the organization “chose to fully endorse the work of the Southern Regional Education Board (SREB) *Standards for Quality Online Teaching and Online Teaching Evaluation for State Virtual Schools* as a comprehensive set of criteria.”¹³⁰ While the SREB standards indicate they “have been supported by practice over time, as well as substantiated by research,”¹³¹ neither the SREB nor the iNACOL standards identified the research substantiating these claims. The 2011 revised version of the iNACOL standards indicated that “iNACOL organized a team of experts... to review these new standards and the new literature on the topic” and that “iNACOL has received feedback from organizations using these standards for the development of professional development and evaluation of online teachers.”¹³² However, once again the standards were published without any documentation and verification. In fact, the only published research to support the iNACOL standards was a literature review conducted by Ferdig, Cavanaugh, DiPietro, Black, and Dawson to determine whether the standards were supported by research.¹³³ Interestingly, one of the things these researchers found was that the literature available to support the standards was limited because most of the literature focused on online learning with adult populations or on the traditional classroom environment.

There continues to be a lack of reliable and valid evidence to guide full-time online practice and policy.

One area that has often been neglected in the discussions around high quality teachers is the issue of what specific characteristics qualify a teacher for assignment in online environment. A thorny question worth pondering, though it will not be detailed here, is whether full-time virtual school teachers must be citizens of the state they teach in—or whether they might be as distant geographically and culturally as a foreign national living outside the US.¹³⁴ Some

states seem to rely on training to determine qualification, while others appear to rely on certification. Natale and Cook’s study of policies in Alabama, Florida, and Idaho offers illustration.¹³⁵ Both Alabama and Florida rely upon their statewide supplemental virtual schools to provide initial training and on-going professional development, while Idaho developed the online teaching endorsement referenced earlier. Alternatively, as Kraft found, many states require that a certain percentage of charter school teachers be state-certified.¹³⁶ However, the instructional model in many virtual charter schools requires parents/guardians—in the role of the learning coaches—to provide significant instructional support.¹³⁷ Kraft indicated that critics believe that because virtual charter schools “rely so heavily on parental support to oversee student work, parents should be considered ‘teachers,’ and if so considered, it is unlikely that [virtual] charter schools could meet the required percentage of certified teachers.”¹³⁸

In fact, this reliance on parents/guardians to perform instructional duties was the very basis of a legal challenge to the Wisconsin Virtual Academy in 2007.¹³⁹ In this case, the court sided against the virtual charter school, finding that “the school’s parents assumed ‘teaching’ responsibilities for which they were not properly licensed as teachers by the state.”¹⁴⁰ This prompted the Wisconsin legislature to enact the 2007 Wisconsin Act 222, which stated that the person responsible for providing the education services to the child is considered the child’s teacher.¹⁴¹ To date this sort of challenge has not been made in other states.

In the critical area of teacher quality, then, there is reason for continued concern. It is widely accepted that while some instructional practices are effective regardless of the medium, there are also pedagogical demands that are unique to the virtual school environment; however, few teacher education programs provide pre-service or in-service instruction related to virtual schooling. It is true that many virtual schools indicate that they provide their own professional development to their teaching staffs. Yet, when virtual school teachers are surveyed, they typically report that they had received no training prior to assuming their positions. It is known that good research and good standards can provide the cornerstone of good practice—but much research remains geographically/methodologically limited, and currently non-research-based standards prevail. Finally, many proponents of virtual schooling publicly affirm the importance of a highly qualified teaching staff. In practice, however, significant instructional support is often left to parents and guardians—or their designates. The picture is not reassuring.

EMOs and Virtual Charter Schools

Last year’s report questioned whether public funding for schools run by for-profit corporations constitutes an investment in quality education, and it recommended that researchers and policymakers begin to examine this area. At issue was the tension between the imperative to provide a quality online school experience and the need of corporations and for-profit EMOs to maximize profit.¹⁴² For example, a recent study by Stanford University’s Center for Research on Education Outcomes found that students attending charter schools run by EMOs had significantly less academic growth than students

attending charter schools not managed by EMOs.¹⁴³ In this instance it should be noted that the study did not report on such variables such as whether schools were online or brick-and-mortar. However, these kinds of general findings continue to raise questions of whether these differences also exist in student performance in virtual schools run by for-profit as compared to nonprofit EMOs.

For example, last year’s report for the 2012-13 school year

indicated that in Utah, the nonprofit online charter Mountain Heights Academy was graded C, while the for-profit online charter Utah Virtual Academy was graded F.¹⁴⁴ A more complete exploration of the 2012-13 school year data from the Utah Public School Data Gateway is shown in Table 2.7.

Of course, this example is itself limited to a single state where none of the programs were found to be acceptable, and to grades for three of only four programs; in addition, this and other school “grading tools” are admittedly imperfect measures. Still, such results indicate that the question of whether the profit motive may undermine quality of education provided merits ongoing exploration.

A more detailed exploration of all of the 2012-2013 data in last year’s report also yields no clear picture.¹⁴⁵ For example in Arizona, which rates schools as having met or not met an “annual measurement objective” (AMO), only one of five for-profit virtual charters met AMO. Nonprofit charters fared better, with eight out of 15 meeting the objective. However, in California, five of the state’s 17 for-profit virtual charter schools met adequate yearly progress (AYP), while only three of the 14 nonprofit virtual charter schools met AYP. In Colorado, only one of the state’s four for-profit virtual charter schools received an “acceptable” rating, while 16 of the 31 nonprofit virtual charter schools were found to be “acceptable.” And so on with several more inconsistencies, as Table 2.8 indicates. While for-profits performed well (or as well as non profits) in several states, they also performed

Table 2..7. Public School Data Gateway Performance for Utah Online Charter Schools

	Alianza Academy	Mountain Heights Academy	Utah Connections Academy	Utah Virtual Academy
Grade	D	C	*	F
Overall Score	298/600	497/750	**	363/750
Total Proficiency	168/300	189/300	192/300	170/300
Total Growth	130/300	231/300	144/300	151/300
College & Career Readiness	-	77/150	-	42/150

* Due to small enrollment and test-taking numbers, this school does not have a letter grade

** Due to small enrollment and test- taking numbers, this data is not available

poorly in others. Interestingly, out of a total 46 virtual charter schools in nine states (Florida, Indiana, Kansas, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, and Utah), not one earned an acceptable rating. Those failing schools included 28 for-profit and 17 nonprofit. The clearest trend evident here is that many virtual schools are failing to meet their states' criteria for minimal performance.

An initial examination of 2013-14 data collected for this year's report similarly reveals a lack of clear trends. For example, data from Michigan, which rates schools as either being in green, yellow or red status (Table 2.9) and for data from Ohio, which rates schools using a

Table 2.8. For-Profit vs. Nonprofit School Performance Measures for Virtual Charter Schools in 2012-13*

State	For Profit	Nonprofit
AK	2 of 2 found acceptable	2 of 2 found acceptable
AR	2 of 2 found acceptable	-
AZ	1 of 4 found acceptable	10 of 16 found acceptable
CA	5 of 17 found acceptable	3 of 14 found acceptable
CO	1 of 4 found acceptable	16 of 31 found acceptable
DC	1 of 1 found acceptable	-
FL	0 of 1 found acceptable	-
GA	2 of 2 found acceptable	-
HI	1 of 1 found acceptable	1 of 1 found acceptable
IA	2 of 2 found acceptable	-
ID	2 of 3 found acceptable	1 of 5 found acceptable
IL	1 of 2 found acceptable	-
IN	0 of 3 found acceptable	0 of 1 found acceptable
KS	0 of 6 found acceptable	0 of 2 found acceptable
MI	1 of 3 found acceptable	2 of 10 found acceptable
MN	0 of 3 found acceptable	1 of 6 found acceptable
NH	1 of 1 found acceptable	-
NV	1 of 1 found acceptable	1 of 9 found acceptable
OH	0 of 4 found acceptable	0 of 7 found acceptable
OK	0 of 2 found acceptable	-
OR	0 of 2 found acceptable	1 of 7 found acceptable
PA	0 of 3 found acceptable	0 of 6 found acceptable
SC	0 of 4 found acceptable	0 of 1 found acceptable
TN	0 of 3 found acceptable	-
TX	1 of 3 found acceptable	0 of 1 found acceptable
UT	0 of 2 found acceptable	0 of 1 found acceptable
WA	5 of 11 found acceptable	6 of 10 found acceptable

* Excludes the online charter schools that were not rated.

letter grade (Table 2.10), both present mixed results.

Neither state shows a definitive trend in student performance in for-profit or nonprofit providers.¹⁴⁶ As was true of data in last year’s report, the single trend evident is the high percentage of virtual charter schools that are rated as unacceptable.

Readers should, however, note that such performance comparisons of profit and nonprofit virtual charter schools are both cursory and superficial—and, they involve judgments based on criteria that vary by state. To gain a deeper understanding of this issue, and the concerns raised by various journalists,¹⁴⁷ systematic research is needed to better determine if public funding for virtual schools—and especially those virtual schools intended to return a profit—is a sound investment in quality education. Such studies will have to take into consideration a much broader range of important variables, such as demographics of the student body in each school and the number and nature of the teaching staff.

Recommendations

There are many questions that practitioners and policymakers would like answered in relation to the successful implementation of virtual schooling. However, expansion of online options continues to outpace the availability of useful research. As a result, practitioners have little to guide them on how to effectively design, deliver, and support virtual schooling even as policymakers continue to search for effective regulatory models. Unfortunately, when it comes to the latter, “the current climate of K-12 school reform promotes uncritical acceptance of any and all virtual education innovations, despite lack of a sound research base supporting claims that technology in and of itself will improve

Table 2.9. For-Profit vs. Nonprofit School Performance Measures for Virtual Charter Schools in Michigan in 2013-14

Status	For Profit	Nonprofit
Green	1	5
Yellow	1	7
Red	3	7
Not Rated	2	16
Total	7	35

Table 2.10. For-Profit vs. Nonprofit School Performance Measures for Online Charter Schools in Ohio in 2013-14

Status	For Profit	Nonprofit
A	0	0
B	0	1
C	3	4
D	2	3
Not Rated	2	2
Total	7	10

teaching and learning.”¹⁴⁸ Even more disappointing is the considerable enthusiasm from some proponents and their legislative allies of policies that often run contrary to what is actually known from the existing but limited research base.

Given these realities, it is recommended that:

- Policymakers regulate the growth and geographic reach of full-time, taxpayer-funded virtual schools. At present there are serious questions about the effectiveness of many models of virtual schooling. Until these questions can be adequately addressed, policymakers should focus their efforts on promoting virtual school models that have been shown to be successful, while limiting those models that have resulted in questionable student performance.
- State and federal policymakers create long-term programs to support independent research on and evaluation of virtual schooling, particularly *full-time* virtual schooling. More than twenty years after the first virtual schools began, there continues to be a deficit of empirical, longitudinal research to guide the practice and policy of virtual schooling.

In terms of the specific research that is needed, the following topics are recommended as highly important areas to help guide policy.

1. Research is needed to determine the actual costs for providing a quality virtual schooling experience. To date the vast majority of literature related to the cost of virtual schooling has focused on funding in relation to brick-and-mortar schooling.
2. Research is needed to determine the appropriate criteria for making initial judgments about the potential of virtual schools, as well as identifying appropriate means of regular evaluation. At present there is a wide range of policies and procedures relating to approval and ongoing monitoring.
3. Research is needed to determine what constitutes good online teaching, how to effectively prepare teachers for the virtual school environment, and what mechanisms are required to properly evaluate virtual school teachers. It is widely believed that teachers play a fundamental role in the success of students regardless of the setting.
4. Finally, additional research is needed to determine whether the business model of for-profit virtual schooling affects the factors that lead to a high quality online learning experience. It is unclear, but essential to know, whether alternative management arrangements for virtual schools affects the quality of education provided.

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Section III

Full-Time Virtual Schools: Enrollment, Student Characteristics, and Performance

Gary Miron, Western Michigan University
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Executive Summary

This section provides a detailed overview and inventory of full-time virtual schools. Such schools deliver all curriculum and instruction via the Internet and electronic communication, usually asynchronously with students at home and teachers at a remote location. Although increasing numbers of parents and students are choosing this option, we know little about virtual schooling in general, and very little about full-time virtual schools in particular. Nevertheless, the evidence suggests that strong growth in enrollment has continued. Large virtual schools operated by for-profit education management organizations (EMOs) continued to dominate this sector. While more districts are opening their own virtual schools, district-run schools have typically been small, with limited enrollment.

This report provides a census of full-time virtual schools. It also includes student demographics, state-specific school performance ratings, and a comparison of virtual school ratings and national norms.

Current scope of full-time virtual schools:

- Our 2012-13 inventory identified 400 full-time virtual schools that enrolled close to 261,000 students.
- Although only 40.2% of the full-time virtual schools were operated by private education management organizations (EMOs), they accounted for 70.7% of all enrollments.
- Virtual schools operated by for-profit EMOs enrolled an average 1,166 students. In contrast, those operated by non-profit EMOs enrolled an average 350 students, and public virtual schools operating independently enrolled an average 322 students.
- Among the schools in the inventory, 52% are charter schools; together they accounted for 84% of enrollment. School districts have been increasingly creating their own virtual schools, but these tended to enroll far fewer students.

- Relative to national public school enrollment, virtual schools had substantially fewer minority students, fewer low-income students, fewer students with disabilities, and fewer students classified as English language learners.
- While the average student-teacher ratio was 16 students per teacher in the nation's public schools, virtual schools reported more than twice as many students per teacher. Virtual schools operated by for-profit EMOs reported the highest student-teacher ratio: 40 students per teacher.

School Performance Data:

- Most states have implemented school performance ratings or scores. These have typically been based on a variety of measures combined to produce an overall evaluation of school performance.
- In 2013-14, 28% of virtual schools received no state accountability/performance rating. Of the 285 schools that were rated, only 41% were deemed academically acceptable.
- Independent virtual schools were more likely to receive an acceptable rating than virtual schools operated by private EMOs: 48% compared with 27.6%.
- During the 2013-14 school year, charter virtual schools lagged behind their district-operated virtual schools in terms of acceptable school performance ratings by seven percentage points: 37.6% compared with 44.9%.
- As schools transitioned from the adequate yearly progress (AYP) measure to multiple performance measures under ESEA flexibility waivers, differences in performance outcomes of independent virtual schools and those run by private EMOs continued. In addition, full-time virtual schools continued to lag significantly behind traditional brick-and-mortar schools.
- Only 154 virtual schools reported a score related to on-time graduation in 2013-14. Based on data available in states' annual federal reports, the on-time graduation rate (or four-year graduation rate) for full-time virtual schools was nearly half the national average: 43.0% and 78.6%, respectively.

Recommendations

- Given the rapid growth of virtual schools, the populations they serve, and their relatively poor performance on widely used accountability measures, it is recommended that:
- Policymakers slow or stop growth in the number of virtual schools and the size of their enrollment until the reasons for their relatively poor performance have been identified and addressed.

- Policymakers specify and enforce sanctions for virtual schools if they fail to improve performance.
- Policymakers require virtual schools to devote more resources to instruction, particularly by reducing the ratio of students to teachers. Given that all measures of school performance indicate insufficient or ineffective instruction and learning, these virtual schools should be required to devote more resources toward instruction. Other factors, such as the curriculum and the nature of student-teacher interactions, should also be studied to see if they are negatively affecting student learning.
- Policymakers and other stakeholders support more research for better understanding of the characteristics of full-time virtual schools. More research is also needed to identify which policy options—especially those impacting funding and accountability mechanisms—are most likely to promote successful virtual schools.
- State education agencies and the federal National Center for Education Statistics clearly identify full-time virtual-schools in their datasets, distinguishing them from other instructional models. This will facilitate further research on this subgroup of schools.
- State agencies ensure that virtual schools fully report data related to the population of students they serve and the teachers they employ.
- State and federal policymakers promote efforts to design new outcome measures appropriate to the unique characteristics of full-time virtual schools. The waivers from ESEA present an opportunity for those states with a growing virtual school sector to improve upon their accountability systems for reporting data on school performance measures.

Section III

Full-Time Virtual Schools: Enrollment, Student Characteristics, and Performance

The virtual school sector is relatively new. Along with this newness comes volatility. In the last year, we have seen some large changes in this sector, with a number of full-time virtual schools being closed and an even larger number of new virtual schools opening. Although there is a notable lack of credible research evidence related to online education—especially evidence on full-time programs, as noted in earlier sections of this report—an increasing number of parents and students are opting for full-time online options. In addition, many states have adopted legislation permitting full-time virtual schools or removing the caps that once limited their growth. There is obviously continued enthusiasm for full-time online schools, even while information has been lacking on how these schools operate, which students they serve, and what their outcomes have been.

To fill this information gap, this section of the report offers a unique inventory of full-time virtual schools. The inventory, initiated in this NEPC report series, serves as a key research-based effort to track developments nation-wide. It helps identify which students full-time online schools are serving, how well the schools are performing, and how quickly their numbers are expanding or contracting. Questions we seek to answer include:

- How many full-time virtual schools operate in the U.S.? How many students do they enroll?
- What are the key characteristics of these schools and who operates them?
- What are the demographic characteristics of students enrolled in full-time virtual schools? Within individual states, how do demographic data differ for students enrolled in virtual schools and those enrolled in brick-and-mortar schools?
- How do full-time virtual schools perform in terms of such school performance measures as state performance ratings and graduation rates?
- Student demographics reported here include grade level, ethnicity, gender, socioeconomic status, special education status, and English language learning status. Data on school performance includes a comparison of aggregate performance ratings and national norms. We also include data on staffing, specifically on teacher to student ratios.

This report builds on earlier reports; we have updated the inventory with available data on schools operating during the 2013-14 academic year. In addition, we have provided details on specific schools in Appendices C and D, which can be downloaded from the NEPC website: <http://nepc.colorado.edu/publication/virtual-schools-annual-2015>.

Data Sources, Selection Criteria and Aggregation Calculations

The findings presented in this section are based on publicly available data, collected, audited, and warehoused by public authorities. Data from the National Center for Education Statistics was particularly helpful in gathering key data on enrollment and student demographics and staffing. Data from state education agencies and from individual school web sites was also used to fill in data not available from NCES.

The scope of this inventory is limited to full-time, public elementary and secondary virtual schools based in the U.S. These include virtual schools operated by for-profit and nonprofit Education Management Organizations (EMOs) as well as virtual schools operated by states or districts. Private virtual schools (online schools funded in whole or in part by charging tuition and fees, rather than relying on a public funding program using tax dollars) are excluded. Also excluded are schools offering a combination of full-time virtual programs and blended programs, unless it was possible to separate data for the full-time virtual school component.

Schools were typically identified by the unique school ID code assigned by the National Center for Education Statistics (NCES) or, for relatively new schools, by unique building or school ID codes assigned by state agencies. These criteria helped identify and exclude smaller programs operated by districts, or schools not intended to be full-time virtual schools. That is, we worked to eliminate programs that simply offer an extensive menu of individual course options but do not function as schools.¹⁴⁹ We also excluded hybrid schools, which employ both face-to-face and online instruction, as well as schools enrolling fewer than 10 students.¹⁵⁰ Such restrictions allow for more confidence in attributing various outcomes to specific types of schools.

In applying selection criteria, we identified scores of virtual schools or programs that did not meet our criteria. In preparing our first report, we initially identified close to 100 schools that we eventually excluded because no enrollment data were available, or because we determined that they were based in traditional schools and data could not be disaggregated. In the second year, this was true for an additional 62 schools. For this report, we identified more than 20 virtual programs or blended instruction schools that initially appeared to be full-time virtual schools. After closer examination, we found that these did not meet our criteria and they were removed from the inventory.

The primary sources for total enrollment and school performance data were the Common Core of Data from NCES, state-level datasets, and school report cards for the 2013-14 school year. Data for grade level enrollment, race-ethnicity and gender were obtained from NCES and represent the 2011-12 school year, which is the most recent data available.

Aggregated data reflect weighted averages based on enrollment. That is, averages have been calculated so that the influence of any given school on the aggregated average is proportional to its enrollment. Comparisons were made to norms for all public schools in the United States.

Limitations

There are several general limitations that readers should keep in mind.

Incomplete demographic data. The tables in Appendices C and D have several gaps that reflect missing data. Some states combine virtual school data with local district data in ways that make disaggregation impossible. For example, while data on student ethnic background and on free-and-reduced-price lunch status are rather complete, the special education data are not. This was particularly problematic in states where charter schools are not considered Local Education Authorities or districts, and thus do not have a legal responsibility to provide special education services. Also, some states combine charter school data with local district data, which makes it impossible to parse the numbers for only full-time virtual schools.

Comparison groups. National aggregate results for all public schools provide the base for several comparisons in this report, which profiles virtual schools in 30 states. While comparisons of two inherently different forms of schooling, each representing different geographic datasets, have some obvious weaknesses, national aggregate data is what state and federal agencies typically use in their reports and comparisons. Following the agencies' lead is intended to allow reasonable comparison of this report with others. An additional consideration is that, because the 30 states represented are among the nation's largest and most densely populated, the national comparison is informative, if not perfect. It is perhaps also worth noting that the national data include data for full-time virtual schools, although it constitutes a relatively small subset.

Instability in virtual schools. Full-time virtual schools are rapidly evolving; currently, the number of such schools, their demographic composition, and their performance data could vary from the 2011-12 demographic data and the 2013-14 performance data presented here (the most recent available for each category). When the fluidity of the terrain is layered onto the scope of this attempt to compose a national portrait, some errors of inclusion and exclusion seem likely. Documented corrections to the data in the appendices are welcome and can be submitted to the authors through the National Education Policy Center.

Growth and Current Scope of Full-Time Virtual Schools

There is an array of education services delivered online. On one end of the continuum, is the delivery of individual courses to students who are otherwise enrolled in brick and mortar schools. Next, there are a wide array of hybrid or blended learning programs and schools that are serving students in a combination of face-to-face and online activities. On the other end of the continuum are full-time virtual schools where students receive all of their instruction online. Full-time virtual schools receive funding for delivering what is supposed to be the full education. It is important to be cognizant of the diverse forms or types of online learning that exist, although the focus in this section is only on the full-time virtual schools.

Although virtual schools still account for a relatively small portion of the overall school choice options in the U.S., they now constitute one of the fastest-growing options, overlapping with both homeschooling and charter schools. During the 2013-14 school year, we found 30 states that had full-time virtual schools—many of them charters. (Other states also offer virtual education options, but in several other formats including, for example, blended learning or supplemental coursework.) Appendix B details student enrollments by state.

Figure 3.1 illustrates the estimated enrollment growth in full-time virtual schools over the last 12 years.¹⁵¹ The International Association for K-12 Online Learning (iNACOL) typically reports much higher estimates, but those estimates seem to include other types of virtual instruction—blended or hybrid schools, for example. Figure 3.1 also illustrates the proportion of students in full-time virtual schools enrolled in schools operated by K12 Inc. and Connections Academy, the two largest for-profit EMOs. K12 Inc. schools account for 36% of all enrollments in full-time virtual schools, and Connections academies account for 17% of all enrollments. Together, these two companies account for 56.7% of all enrollments in 2012-13. Their overall percentage of full-time virtual school enrollments has been increasing gradually each year

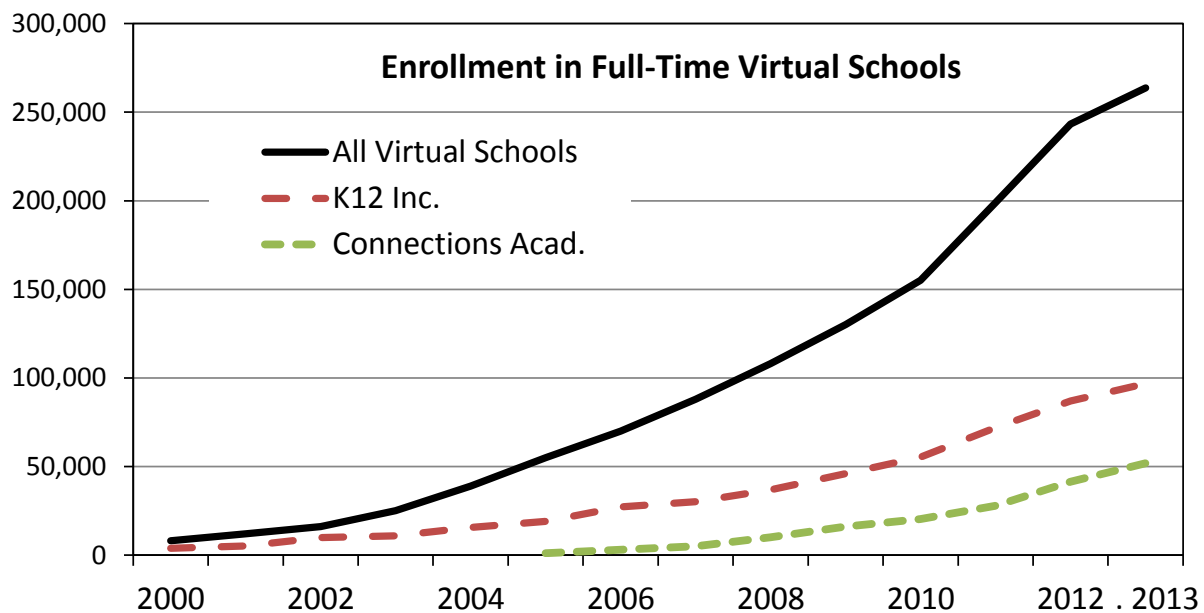


Figure 3.1. Estimated Enrollment Trends in Full-Time Virtual Schools

Some 32 schools included in our 2012-13 figures were excluded in 2013-14 because they no longer met our inclusion criteria; for example, some closed while others reported no enrollment. Four of the schools identified last year were also removed because we learned that they were blended learning and not full-time virtual schools. However, we identified

an additional 92 new full-time virtual schools in 2013-14, bringing the total number of such schools to 400, with an enrollment of close to 261,000 students (Table 3.1). See Appendix C for a list of identified schools.¹⁵² Charter schools comprised the majority of the new schools (46), accounting for 52% of all full-time virtual schools and for 84% of their enrollment. District virtual schools grew more slowly (25), likely because districts tend to create virtual programs rather than separate virtual schools.

Table 3.1. Distribution of Schools and Students Across District and Charter Sectors, 2013-14

	Schools	Percent of all Schools	Students	Percent of all Enrollment	Average Enrollment Per School
District	192	48%	43,033	16.54%	224
Charter	207	52%	217,204	83.46%	1,049
Total for All Virtual Schools	400	100.0%	260,237	100.0%	650

The statistics for 2013-14 represent a net increase of 60 schools and a 7.6% net increase in enrollment from 2012-13, when our report found 400 schools, enrolling just under some 261,000 students. Growth was far lower than the 21.7% growth between 2011-12 and 2012-13—but still notable at 7.6%.

Table 3.2. Distribution of Schools and Students by Operator Status 2013-14

	Schools	Percent of all Schools	Students	Percent of all Enrollment	Average Enrollment Per School
Independent	221	55.25%	70,769	27.19%	320
Nonprofit EMO	19	4.75%	6,659	2.57%	350
For-profit EMO	160	40%	182,809	70.24%	1,143
<i>K12 Inc.</i>	99	24.75%	95,535	36.71%	965
<i>Connections Academy</i>	29	7.25%	52,138	20%	1,798
Total for All Virtual Schools	400	100.0%	260,237	100.0%	651

Schools operated by for-profit EMOs increased by 24, and those operated by non-profit EMOs grew by 11. Independent virtual schools (those not managed by any EMO) grew most,

increasing by 30. Like district schools, independent virtual schools tend to be small, so it is not surprising that for-profit EMOs experienced greatest growth in student population.

While new district-operated schools did add significantly to the number of schools operating, such schools tend to be small. Growth in student population came primarily from the significantly larger virtual schools operated by for-profit EMOs. In 2012-13, for-profit EMOs managed 138 charter and district schools; in 2013-14, that number grew to 160 (see Table 3.2). As noted earlier, K12 Inc. is by far the largest EMO in this sector. In 2013-14, K12 Inc. alone operated 99 full-time virtual schools enrolling just under 96,000 students. Connections Academy LLC, the second largest for-profit operator, operated 29 such schools with just under 53,000 students. (Note, however, that this figure under-

represents the role of for-profit EMOs. While this report includes only virtual schools that EMOs are entirely responsible for, many district-operated virtual schools subcontract to K12, Inc. and Connections Academy, LLC to provide online curriculum, learning platforms, and other support services.) In contrast to for-profit EMOs, their non-profit counterparts operated only 19 schools, enrolling 6,659 students. Generally, charter virtual schools are much more likely to be operated by an EMO.

Overall, EMOs operated 45% of all full-time virtual schools and accounted for 73% of enrollment, increasing their market share by close to two percentage points. Most are for-profit, and they continued to increase the average size of their already very large schools.

Individual online schools operated by the for-profit EMOs had an average enrollment of 1,143 students (Table 3.2). In contrast, the average enrollment in the schools operated by non-profit EMOs was considerably smaller, with an average of 350 students per school. Independent virtual schools (those public virtual schools with no private EMO involvement) had the smallest average school size, 322 students per school.

A number of other EMOs have emerged to operate full-time virtual schools. Insight Schools, Learning Matters Educational Group, and Mosaica Education Inc. all operated 7 virtual schools in 2013-14. The largest nonprofit EMOs are Learning Matters Educational Group (7 schools), and Roads Education Organization (4 schools). More expansion is coming from some EMOs that formerly operated only brick and mortar schools but are now expanding to include full-time virtual schools. These include Edison Schools Inc., Leona Group LLC, Mosaica Inc., and White Hat Management. Given the relatively lucrative circumstances¹⁵³ under which full-time virtual schools can operate, it is likely that more for-profit EMOs will be expanding their business models to include full-time virtual schools.

Student Characteristics

To provide context for school performance data comparisons discussed later in this report, following is an analysis of student demographics.

Race-Ethnicity

Aggregate data from full-time virtual schools looked rather different from national averages in terms of student ethnicity. Close to 70% of the students in virtual schools were white-non-Hispanic, compared with the national mean of 54% (see Figure 3.2). The proportion of Black and Hispanic students served by virtual schools was noticeably lower than the

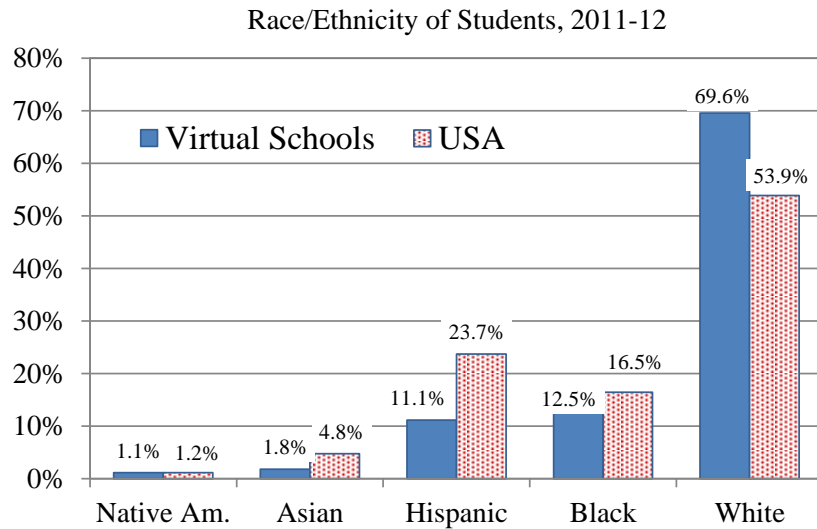


Figure 3.2. Race/Ethnicity of Students in Virtual Schools Compared with National Averages, 2011-12

Table 3.3. Student's Race Ethnicity, 2011-12

	Native American	Asian	Hispanic	Black	White	Pacific Islander	Multi-racial
Independent	1.0%	1.4%	14.1%	9.5%	70.4%	0.3%	3.3%
Nonprofit	2.8%	2.4%	14.4%	3.9%	73.0%	0.3%	3.2%
For-Profit	1.2%	2.0%	9.8%	14.2%	69.1%	0.3%	3.6%
K12 Inc.	1.0%	2.6%	9.2%	17.0%	66.9%	0.3%	3.0%
Connections Acad.	0.9%	1.5%	11.4%	9.4%	71.7%	0.2%	5.0%
District	1.4%	1.5%	14.5%	8.4%	70.9%	0.2%	3.1%
Charter	1.1%	1.9%	10.6%	13.3%	69.4%	0.3%	3.5%
All Virtual Schools	1.1%	1.8%	11.1%	12.5%	69.6%	0.3%	3.5%
National Average ¹⁵⁴	1.1%	4.7%	24.4%	15.7%	51.2%	0.4%	2.5%

national average. Only 10.3% of the virtual school enrollment was Black while 16.5% of all public school students were Black. An even greater discrepancy is found among Hispanic students, who comprised only 11% of the virtual school students but 23.7% of all public school students.¹⁵⁵ Because virtual schools have a large presence in states with large Hispanic populations, such as Arizona, California, and Florida, this finding is surprising. It appears that virtual schools are less attractive to Hispanics, or perhaps that virtual schools are doing less outreach or marketing to this population. More limited access to technology by minority and low-income families may also help explain underrepresentation of these groups in virtual schools, even though most virtual schools loan a computer to students and frequently cover the expense for monthly Internet access. Data available from state sources for 2012-13 and 2013-14 was less complete than the 2011-12 data collected from the National Center for Education Statistics (NCES)¹⁵⁶; still, the pattern of distribution of students by race/ethnicity was largely unchanged except for a very small increase in minority students.

Table 3.3 breaks out race/ethnicity data by school type and operator status. Non-profit EMO virtual schools had some distinct differences, although their very small share of enrollment makes drawing inferences difficult. Similarly, the differences between district and charter operated schools and those between for-profit or independent virtual schools are also very small.

Sex

While the population in the nation's public schools is nearly evenly split between girls and boys, the population of students in virtual charter schools overall skewed slightly in favor of girls (52.5% girls and 47.5% boys). Virtual schools catering to students in elementary and middle school tended to be more evenly split between boys and girls, but high schools were likely to have a larger proportion of boys. Charter schools and for-profit EMO-operated schools tended to have slightly more girls than boys enrolled, while district-run virtual schools tended to have a more even distribution.

Free and Reduced-Price Lunch, Special Education, and English Language Learner Status

As illustrated in Figure 3.3, the proportion of students in full-time virtual schools who qualified for free or reduced-price lunch (FRL) was 10 percentage points lower than the average in all public schools in 2010-11: 35.1% compared with 45.4%. Of those virtual schools reporting data, 13% enrolled a higher percentage of FRL students than the national average, while 87% of reporting schools indicated a lower percentage. The data available after 2010-11 was less complete, although it suggests that the proportion of FRL students in virtual schools has increased a few percentage points. In general, virtual schools continue to serve a noticeably lower percentage of economically disadvantaged students than other public schools.

Figure 3.3 also illustrates the representation of students classified as special education, indicating they have a disability as well as a recorded Individualized Education Plan (IEP).

Overall, the proportion of students with disabilities in virtual schools is around half of the national average, or 7.2% compared with 13.1%.

Only 92 schools reported special education data in 2010-11 and the available data in subsequent years is even less complete. Just over 11% of the virtual schools

reported having a higher proportion of students with disabilities than the national average, while 88.5% had a lower than average proportion of students with disabilities.

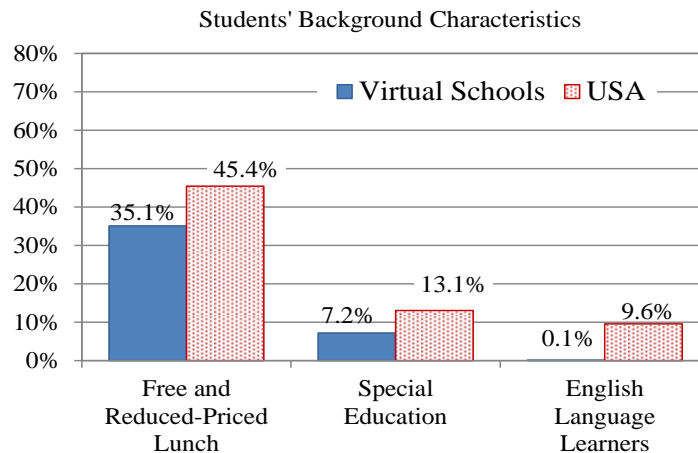


Figure 3.3. Students Qualifying for Free and Reduced-Priced Lunch, Classified as Special Education, or Classified as English Language Learners, 2010-11

Given that charter schools overall usually have a substantially lower proportion of students with disabilities compared with district schools or state averages, one might expect an even greater difference in virtual school enrollments because it seems more difficult to deliver special education support via the Internet. However, it may be that the populations of students with disabilities in virtual and traditional public schools differ substantively in terms of the nature and severity of students' disabilities. Past research has established that traditional public schools typically have a higher proportion of students with moderate or severe disabilities, while charter schools have more students with mild disabilities that are less costly to accommodate.¹⁵⁷

English language learners represent a growing proportion of students in the nation's schools, especially in the states served by virtual schools. However, only 0.1% of full-time virtual school students are classified as English language learners (ELLs). This is a strikingly large difference from the 9.6% national average (Figure 3.3). None of the virtual schools had higher proportions of ELLs than the national average, and the ELL student enrollment of most virtual schools with data available was less than 1%. There are no clear explanations for the absence of students classified as English language learners in virtual schools. One possible explanation could be that the packaged curriculum is available only in English; another possible explanation might be that instructors have insufficient time to support these students.

Enrollment by Grade Level

The National Center for Education Statistics has four school level classifications: elementary, middle school, high school, or other. Other refers to grade configurations that cut across the 3 levels of education. Close to half of virtual schools (45%) are designed or intended to enroll students from kindergarten to grade 12, which places them into the category of other. Fifteen percent are designated as primary schools, less than 2% as middle schools, and 38% as high schools. While this classification system is generally useful for describing traditional public schools, it is less useful for categorizing charter

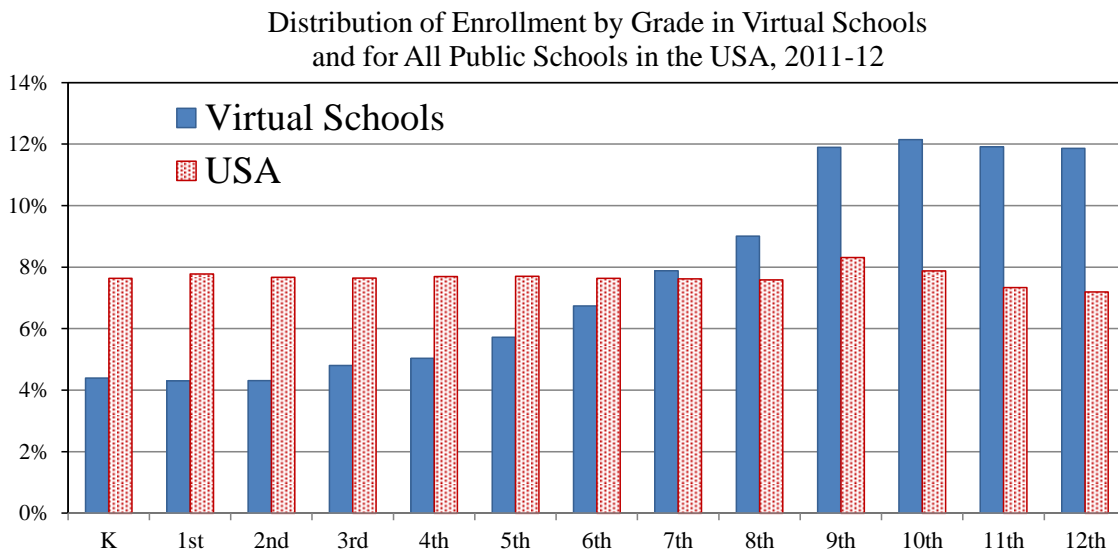


Figure 3.4. Enrollment by Grade Level for Virtual Schools and U.S., 2011-12

schools that often have grade configurations that span primary, middle, and high school levels. This classification also has limitations in representing the distribution of students in charter schools because many have permission to serve all grades but actually enroll students in a more limited grade range.

To more accurately display the distribution of students in virtual schools, we used actual student enrollment data by grade, obtained from the National Center for Education Statistics. Figure 3.4 depicts the enrollment distribution of students in virtual schools by grade level, compared with national averages. A disproportionate number of students were in high school or upper secondary level. This picture differs from the national picture, where a comparatively equal age cohort is distributed evenly across grades, with a gradual drop from grades 9 to 12.

District schools served slightly more students at the upper-secondary level than charter schools did. More pronounced differences were evident when for-profit schools were compared with nonprofit EMO-operated schools and independent schools, which both

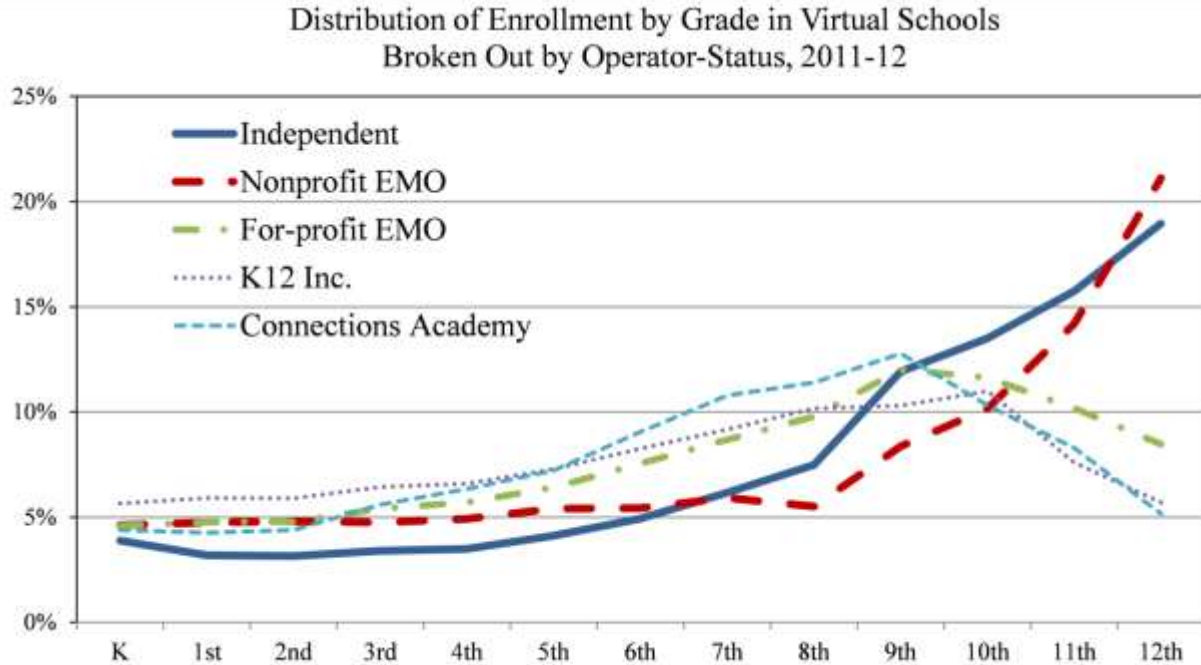


Figure 3.5. Enrollment by Grade Level Broken Out by Operator Status, 2011-12

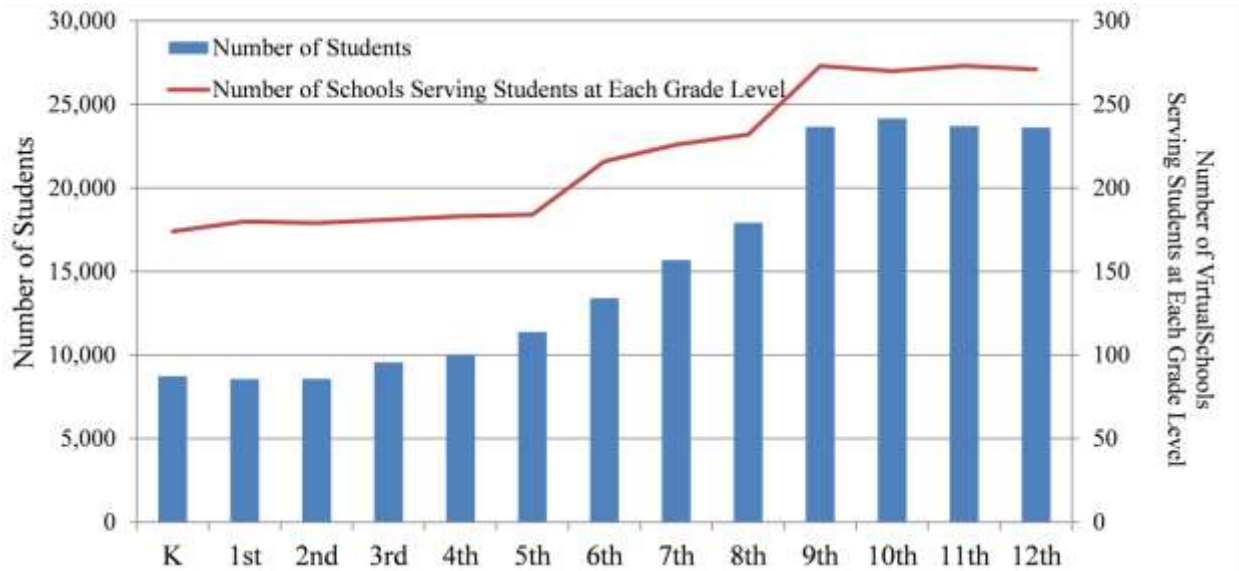


Figure 3.6. Number of Virtual School Students per Grade Level and Number of Schools that Offer Instruction at Each of the Grade Levels

served many upper secondary level students (see Figure 3.5). Virtual schools operated by for-profit EMOs, predominately by K12 Inc. and Connections Academy, served substantially fewer students at the upper secondary level and showed stark enrollment drop offs after grade 9.

Figure 3.6 illustrates the actual number of students served by virtual schools at each grade.¹⁵⁸ Enrollment increased steadily through grade 10 and then decreased slightly in grades 11 and 12. This could be a result of some schools not fully implementing their enrollment plans across all high school grades. Nevertheless, based on the low graduation rates in virtual schools—which we will discuss later—we believe this drop off in students is also explained by a relatively large proportion of students not persisting into the upper grades, and replacement of students in the full-time virtual schools does not appear to occur as often in these grades as it does in the lower grades.

Student-Teacher Ratios

The data available on student to teacher ratios is incomplete and—given the extreme variations reported from year to year—erratic. Due to a relative dearth of information on student-teacher ratio from state education agencies and from school report cards, the most up-to-date data available was not possible. Thus, we relied on the Common Core of data

Table 3.4. Teacher-Student Ratios, 2011-12

	Number of schools with data	Median	Mean	SD	Max	Min
Independent	142	22.1	33.78	40.10	356	1.4
Nonprofit	9	15.6	17.01	12.36	42	4.6
For-Profit	93	33.1	39.91	33.68	265	1.3
K12 Inc.	57	30.4	39.18	35.77	265	1.3
Connections Academy	16	37.2	35.72	6.49	45.6	24
District	84	26.2	40.51	51.92	356	1.4
Charter	160	26.6	32.86	26.38	150	1.3
All Virtual Schools	244	26.5	35.49	37.27	356	1.3
National Average ¹⁵⁹			16.0 ¹⁶⁰			

for school year 2011-12 from the National Center for Education Statistics to obtain more complete, albeit more dated, figures on teacher student ratios.

While the average ratio was approximately 15 students per teacher in the nation's public schools, virtual schools reported more than twice as many students per teacher. Virtual schools operated by for-profit EMOs had the highest ratio (37 students per teacher), while those operated by nonprofit EMOs had the lowest (17.3 students per teacher). The raw data showed considerable outliers, with some virtual schools reporting only 1 student per teacher and 17 schools reporting 10 or fewer students per teacher. At the other extreme, 3 schools reported having 200 or more students per teacher and 17 schools reported having more than 55 students per teacher.

Table 3.4 depicts the findings broken out by school type and operator status. The small number of nonprofit EMO-operated virtual schools stood out with a median of just under 16 students per teacher. The other groups of virtual schools reported median ratios of between 22 and 37 students per teacher and a mean of between 33 and 40 students per teacher. Connections Academy had by far the highest student-to-teacher ratios with a median of 37 students per teacher.

School Performance Data

This section reviews key school performance indicators, including Adequate Yearly Progress (AYP) status, state ratings, and on-time graduation rates. Performance-based school accountability systems identified in this report required full-time virtual schools and brick-and-mortar schools to fulfill similar academic progress and proficiency expectations. For example, while states have previously calculated graduation rates using varying methods, the four year on-time graduation rate, under a new federally mandated formula effective as of 2011-12 measures the percentage of students who graduate high school four years after entering ninth grade. Comparisons across these measures suggest that virtual schools are not performing as well as brick-and-mortar schools. The findings also reveal that virtual schools operated by private EMOs are not performing as well as public virtual schools with no private EMO involvement.

Adequate Yearly Progress and State Ratings Assigned to Virtual Schools

AYP

School performance ratings were obtained from state sources or directly from school report cards. Although these are weak measures of school performance, they do provide descriptive indicators that can be aggregated across states. Under NCLB in 2002, adequate yearly progress (AYP) reports were implemented as an accountability measure. States are required to administer state assessments in math and reading to demonstrate academic progress. Figure 3.7 illustrates the aggregated results for AYP from 2010-11 and a few earlier years. Essentially, the results for full-time virtual schools were 22 percentage points

lower than results for brick and mortar charter and districts schools. Although the AYP measure is relatively crude, this gap is substantial and noteworthy.

While AYP has been a common metric, in recent years, 42 states (including Washington D.C.) have received waivers on AYP gains. Such waivers have allowed 28 states with virtual schools to discontinue the use of state-determined AYP standards in 2012-13. California, Iowa, and Washington are the only three states with full-time virtual schools that continue to report results based primarily on AYP. In 2011, only 5 of 22 (22.73%) full-time virtual schools in California met their AYP targets. Of brick-and-mortar public schools, the percentage of schools meeting AYP was: 35% for elementary schools; 18% for middle

schools; and 41% for high schools.¹⁶¹ These results mirror results in other states such as Pennsylvania and Ohio with a fast-growing number of virtual schools. In the 2010 and 2011 school years, when Pennsylvania was still reporting AYP status, the differences among schools' AYP for full-time virtual schools, traditional brick-and-mortar charters and district schools was substantial: 16.67% (2 of 12) cyber schools met AYP as compared to 75% of traditional brick-and-mortar schools and 61% of district charters, respectively¹⁶². In the same year, the Center for Research on Education Outcomes (CREDO) at Stanford University reported that in both reading and math, all eight cyber schools operating in Pennsylvania at the time performed significantly worse than their brick-and-mortar charter and district school counterparts.¹⁶³

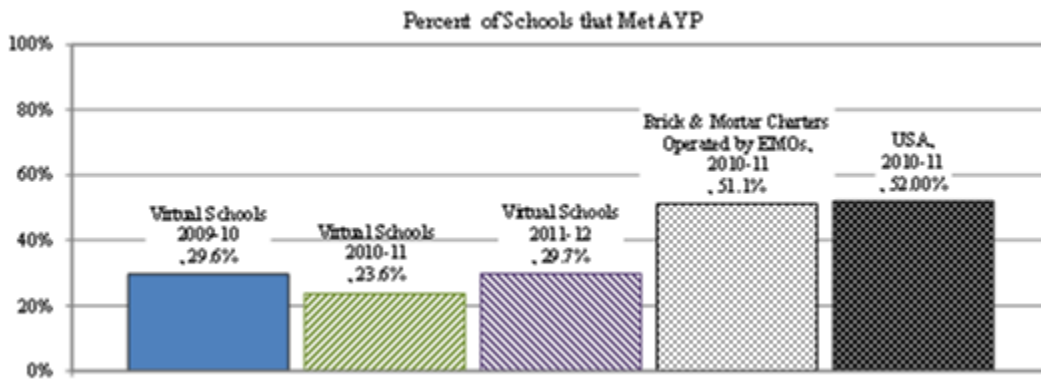


Figure 3.7. Percentage of Schools Meeting Adequate Yearly Progress, by School Type and Year

As Figure 3.7 indicates, annual AYP data collected over several years from state education agencies shows a trend towards lower AYP ratings lower for virtual schools managed by EMOs than for brick-and-mortar schools managed by EMOs: 29.6% compared with 51.1%. By contrast, Iowa's first two full-time virtual schools, Iowa Connections Academy and Iowa Virtual Academy (K12 Inc.), which opened in 2012-13, both made AYP for two consecutive years. Of course, there are variations among individual schools and companies represented in the virtual school cohorts discussed here. A few operators of full-time virtual schools

have particularly dismal results. For example, only 30% of the virtual schools (13 out of 43) operated by K12 Inc. with school level reports for AYP made adequate yearly progress towards state proficiency goal in 2011-12. For Connections Academy, 45% (5 out of 11) of its full-time virtual schools met AYP. Under White Hat Management, not one school met AYP goals.

Having waivers for AYP requirements, 30 states with full-time virtual schools developed new school accountability systems. Typically, the new systems focus on growth in student performance over time and include an expanded set of indicators. However, ratings systems vary considerably from state to state. While many states focus predominantly on student proficiency, a wide range of variables influence rating systems and outcomes: standards, scales, cut-off scores on standardized tests, and calculation methods. While twelve states assign schools to categories based on A-F letter grades, other systems include a color-coding rating scheme, a five-star rating system, or a score from 0-100. States using letter grades include: Alaska, Arizona, Idaho, Indiana, Utah, Ohio, Oklahoma, South Carolina and Nevada. Michigan's system uses a color-coding system of green, lime, yellow, orange, red, and purple. Washington D.C. and Pennsylvania use formulas that assign schools a numerical value to indicate performance along a continuum. Other states, Oregon for example, set an absolute standard against which all schools are measured (for example, level 1 = bottom 5% of schools). Still other states, including Wisconsin and Georgia, use a variety of multiple indicators that are then combined to arrive at an overall evaluation of school performance.

Several of the state-specific school performance ratings consider postsecondary and workforce readiness, academic growth gaps, academic growth, academic achievement, and graduation rate. For example, in the 2013-14 school year, Georgia implemented a College and Career Ready Performance Index (CCRPI) that uses multiple indicators to rate schools, including percentages of students reaching proficiency.

Another example of a state that is using multiple indicators is Minnesota, which uses both AYP indicators and its own Multiple Measurement Rating (MMR). The MMR targets a combination of multiple domains, emphasizing growth, achievement gap and proficiency in an effort to increase the validity of its assessments. Only two of 10 virtual schools in Minnesota consistently received an acceptable rating from 2011 to 2013; and, virtual schools that performed poorly on MMR also fell below AYP requirements. More disturbing is that every virtual school operated by private EMOs in Minnesota in 2013 performed poorly on both AYP the MMR measures. This suggests that more time and flexibility—and even alternative assessments—under current federal policy may not be enough to realize and reflect desired improvements.

Such results support are evidence of the 22 percentage point gap in AYP between virtual and traditional schools illustrated in Figure 3.7, with no evidence of an improvement trend emerging. That is: the overall negative trend for AYP performance documented earlier continued in the years 2012 and 2013 for EMO-managed full-time virtual schools in states still reporting of AYP. It remains to be seen whether Minnesota's experience—where EMO

schools performed poorly not only in AYP but in an alternative assessment system —will prove the case in other states.

State School Performance Ratings

To compare academic performance of full-time virtual schools for 2011-12 to the 2013-14 school years, we used three possible ratings: academically acceptable, academically unacceptable, and not rated. To supplement admittedly imperfect AYP data, Table 3.5 details aggregated data from State School Performance Ratings from the three most recent years (ratings for individual virtual schools appear in Appendix D).

As noted above, many states have adopted new accountability systems using multiple measures intended to that capture variables including academic proficiency, longitudinal academic growth, growth gaps, college readiness, attendance and graduation. Such new generation accountability systems are expected to add significantly to the size and scope of school performance measures, thus adding more detailed information about the aggregate performance trends of full-time virtual schools. In order to aggregate the ratings across states, we classified the ratings that virtual schools received as either “acceptable” or “unacceptable” based on guidance provided by state education agencies. We were then able to aggregate findings within and across states. Ratings were available for 228 out of 261 virtual schools included in the 2011-12 inventory, for 238 out of 381 virtual schools in the 2012-2013 inventory, and for 285 of 400 virtual schools in this new, 2013-14 inventory.

Table 3.5. Percentage of Virtual Schools with Acceptable School Performance Ratings, 2011-12 through 2013-14

	2011-12: Percentage of Total Rated Acceptable N=228	2012-13: Percentage of Total Rated Acceptable N=238	2013-14 Percentage of Total Rated Acceptable N=285
For-profit EMO	18.5%	31.9%	27.6% (29 out of 160)
Nonprofit EMO	50.0%	22.2%	50.0% (6 out of 12)
Independent	32.6%	36.7%	48.8% (82 out of 168)
Total	28.1%	34.2%	41.1% (117 out of 285)

Changes in the percentage of the total number of virtual schools rated acceptable appears to be on an upward trend: 28.1 percent in 2011-12, 34.2 in 2012-13, and 41.1 percent in 2013-14. However, this trend should be interpreted with caution. First, a steady percentage of virtual schools do not have state ratings: 71 virtual schools (27.20%) lacked ratings in 20011-12, 106 (27.82%) lacked ratings in 2012-13, and 112 (28.21%) lacked ratings in 2013-

14. Second, some schools closed and some new schools opened, which raises uncertainty about the overall direction of the trend. Third, in 2013-14, California accounted for the largest share of virtual schools (35 schools) with no measures of school performance, followed by Michigan (15 schools) and Florida (12 schools). A law passed in 2012 called for California to suspend the state's standardized testing and reporting in 2013 to allow brick-and-mortar public schools and virtual schools time to transition to a new assessment system aligned with Common Core State Standards. Incomplete data and fluidity in school population and assessment likely have an undetermined import in this area.

Table 3.6. Percentage of Virtual Schools with Acceptable School Performance Ratings, 2013-14.

	2013-14 All Virtual Schools that received acceptable ratings N=285
District-Operated Virtual Schools	44.9% (61 out of 136)
Charter Virtual School	37.6% (56 out of 149)
Total	41.1% (117 out of 285)

Overall then: of 400 full-time virtual schools, state ratings were available for only 285 (71.2%)—meaning that no state assessments were available for nearly 30% of the full complement of schools. Of the 285 that were rated, only 117 (41.1%) were rated acceptable. In 2013-14, independent virtual schools earned acceptable ratings at a much higher rate than those managed by for-profit EMOs: 48.8% and 27.6% respectively. Over the last three years, in fact, independents show the single steady upward trend in ratings: 32.6%, 36.7% and 48.8%. Neither for-profit or non-profit EMO schools have show steady movement one way or the other.

It is interesting to note (Table 3.6) that district-operated virtual schools edged out their charter counterparts in acceptable school performance ratings by seven percentage-points in 2013-14. This is an interesting development that deserves further scrutiny by practitioners, academics, and policy makers.

Graduation Rates

In recent years, schools and states have been standardizing how they record and report graduation. The measure widely used today is “On-Time Graduation Rate,” which refers to the percentage of all students who graduate from high school within four years after they started 9th grade. We identified a total of 174 virtual schools (about 44% of the total 398) that reported a score related to on-time graduation in 2012-13. This is a slight improvement from the 2011-12 school year,¹⁶⁴ but it is still surprisingly low. The large number of virtual schools not reporting a graduation rate is partially due to the fact that some of these schools do not serve high school grades; others are relatively new and have not had a cohort of students complete grades 9-12. Even so, the number seems low in light of the large enrollment reported for grades 9-12.

As Figure 3.8 illustrates, the on-time graduation rate for the full-time virtual schools was a little more than half the national average¹⁶⁵: 43.8% and 78.6%, respectively—an improvement of 6 percentage points compared with results for 2011-12. The evidence on graduation rates remains inconclusive because so many schools have not reported rates, but it is in line with the findings on AYP and state school performance ratings. Despite the limited data,

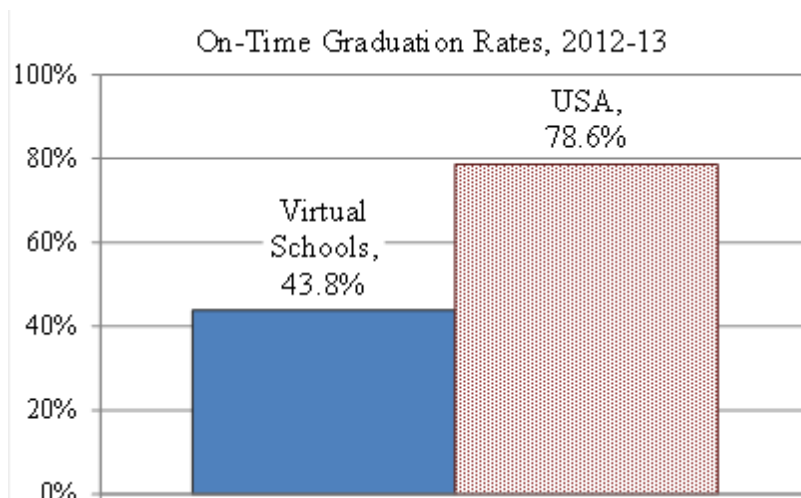


Figure 3.8. Mean Graduation Rates for Virtual Schools

Table 3.7 Graduation Rates, 2012-13

	Number of schools with data	4 year graduation rate
Independent	102	50.87%
Nonprofit	9	40.50%
For-Profit	63	40.90%
K12 Inc.	30	37.83%
Connections Acad.	14	47.06%
District	57	44.70%
Charter	117	42.90%
All Virtual Schools	174	43.80%
National Average	NA	78.60%

this is an important outcome measure that contributes to the overall picture of school performance.

Table 3.7 shows that in 2012-13, independent virtual schools outperformed for-profit and non-profit counterparts in graduation rates—by more than 10 percentage points. Within

the subgroup representing for-profit EMO-managed schools, the on-time graduation rate at K12, Inc. was 37.8%, and at Connections Academy 47% percent. In addition, district schools' rate of 44.7% was a bit better than charters' rate of 42%.

Table 3.8. Graduation Rates, 2013-14

	Number of schools with data	4 year graduation rate
Independent	104	52.25%
Nonprofit	10	38.78%
For-Profit	40	38.96%
K12 Inc.	15	35.82%
Connections Acad.	10	50.83%
District	76	42.98%
Charter	78	43.06%
All Virtual Schools	154	43.05%
National Average ¹⁶⁶	NA	74.7% ^{167 168}

Table 3.8 illustrates that during the 2013-14 school year, independent virtual schools again had the highest on-time graduation rate, 52.2%. Rates in non-profits and for-profit operated virtual schools were 38.8% and 39%, respectively. Virtual schools operated by EMOs continue to lag significantly behind their counterparts in on-time graduation. Within the subgroup representing EMO-managed virtual schools, high-school students at K12, Inc. had an on-time graduation rate of 35.8%; as in 2012-13, Connections Academy did better at 50.8%.

Charter virtual schools again had a graduation rate similar to that of district-operated schools at about 43%. Overall, average on-time graduation rates remained much lower for virtual schools than for traditional public schools in the US: only 43.05 percent of students at virtual high schools graduated on time, whereas the national average for all public high schools was more than double that: 74.7 percent.

Discussion

In this emerging era of increased federal flexibility, each state with a waiver from federal accountability requirements has been working toward new accountability systems, including improved means of determining graduation rates. States with waivers have been given opportunity to use multiple measures and expand assessment criteria to include

such variables as proficiency, student growth, high-school graduation rates, and college and career readiness. We can hope that new measures will be more suitable for capturing the performance of full-time virtual schools.

Unlike other technological options, full-time virtual schools do much more than simply supplement and expand the courses available in traditional brick-and-mortar schools. Instead, they are being used to expand school choice, concurrently advancing privatization, entrepreneurship and private financial investment. With key providers vigorously lobbying legislatures and national organizations promoting school choice, virtual schooling now has a firm foothold: 30 states and the District of Columbia allow full-time virtual schools to operate, and even more states allow, or in some cases require, one or more courses to be delivered online to public school students.

Our analyses indicate that full-time virtual schooling continues to grow rapidly. While it is growing more rapidly in some sectors than other, every sector is growing. Still, our findings indicate for-profit EMOs continue to dominate and increased their market share from 2012-13 and again from 2013-14. Interestingly, in the current 2014-15 school year, a few of the largest virtual schools operated by K12 Inc. have indicated that they want to part ways with the for-profit giant. Should that happen, we could see some dramatic changes in the distribution of schools and students.

The rapid expansion of virtual schools is remarkable given the consistently negative findings regarding student and school performance. The advocates of full-time virtual schools remain several years ahead of policymakers and researchers, and new opportunities are being defined and developed largely by for-profit entities accountable to stockholders rather than to any public constituency.

The rapid expansion of virtual schools is remarkable given the consistently negative findings regarding student and school performance.

Our findings indicate that district operated virtual schools as well as virtual schools without a management company are more likely to perform better. They are much smaller, and they have substantially lower teacher to student ratios. More research is needed to understand the characteristics of the successful outliers or exceptions.

Contrary to the overwhelmingly negative evidence on the performance of current virtual schools, we remain optimistic that full-time virtual schools can work and hope that more research and more reasoned policymaking can revise and strengthen regulations that steer the operation and growth of full-time virtual schools. Further expansion in this sector should be contingent on school performance.

Advocates of virtual schools may argue that the limitations in our data mean that findings such as those we share in this report are not definitive. We agree that there is a need for stronger measures of school performance. Nevertheless, even though the outcome measures available are not as rigorous as desired, and even though the data reported by virtual schools are not as complete as they should be, the findings still reveal that across

all school performance measures, most virtual schools are lacking. There is not a single positive sign from the empirical evidence presented here. Given this picture, continued expansion seems unwise. More research is needed; and to enable such research, state oversight agencies need to require more, and better refined, data.

Recommendations

It is recommended that:

- Policymakers slow or stop growth in the number of virtual schools and the size of their enrollment until the reasons for their relatively poor performance have been identified and addressed.
- Policymakers specify and enforce sanctions for virtual schools if they fail to improve performance.
- Policymakers require virtual schools to devote more resources to instruction, particularly by reducing the ratio of students to teachers. Given that all measures of school performance indicate insufficient or ineffective instruction and learning, these virtual schools should be required to devote more resources toward instruction. Other factors, such as the curriculum and the nature of student-teacher interactions, should also be studied to see if they are negatively affecting student learning.
- Policymakers and other stakeholders support more research for better understanding of the characteristics of full-time virtual schools. More research is also needed to identify which policy options—especially those impacting funding and accountability mechanisms—are most likely to promote successful virtual schools.
- State education agencies and the federal National Center for Education Statistics clearly identify full-time virtual-schools in their datasets, distinguishing them from other instructional models. This will facilitate further research on this subgroup of schools.
- State agencies ensure that virtual schools fully report data related to the population of students they serve and the teachers they employ.
- State and federal policymakers promote efforts to design new outcome measures appropriate to the unique characteristics of full-time virtual schools. The waivers from ESEA present an opportunity for those states with a growing virtual school sector to improve upon their accountability systems for reporting data on school performance measures

Notes and References: Section III

- 149 For example, school districts or schools offer online courses to cut costs or attract students from other schools/districts/states. These are not actually schools in the sense that they offer the complete state-mandated curriculum; they are just basically individual courses that students can take if they want to. Such a program would never receive an NCES ID no matter how many students enroll in these online courses because it's not a school.
- 150 See notes in the appendices for more details regarding inclusion criteria.
- 151 Estimates for 2000 to 2010 are based on two sources, the annual Profiles of For-Profit and Nonprofit Education Management Organizations from NEPC, and the annual Keeping Pace reports from Evergreen Education, a consulting group that prepares reviews of policy and practice for online learning.
- 152 To be included in this inventory and considered in our analyses, a virtual school has to meet our selection criteria. First of all, it must be classified as a school and not a program. For example, it must be classified as a functioning school and not just a collection of individual optional courses. Online courses offered by school districts or schools to cut costs or attract students from other schools/districts/states, as referred to in Note 1, are therefore not included.
- Additionally, when separating programs from schools, we look for the existence of unique NCES or State Education Agency ID codes that are designated for school units. We exclude hybrid schools, and we avoid schools that have both face-to-face instruction and virtual instruction. Further, in order to be included in our inventory, these virtual schools should have evidence of at least 10 students enrolled. An important part of our analyses examines school performance; by including only full-time virtual schools, we are better able to attribute school performance outcomes to full-time virtual schools.
- 153 Marsh, R.M., Carr-Chellman, A.A., & Stockman, B.R. (2009). Why parents choose cybercharter schools. *TechTrends*, 53 (4);
- Miron, G., & Urschel, J.L. (2012). *Understanding and improving full-time virtual schools: A study of student characteristics, school finance, and school performance in schools operated by K12 Inc.* Retrieved December 11, 2014, from <http://nepc.colorado.edu/files/nepc-rb-k12-miron.pdf>;
- Woodard, C. (2013, July 3). Special Report: The profit motive behind virtual schools in Maine. *Portland Press Herald*. Retrieved February 28, 2014, from http://www.pressherald.com/news/virtual-schools-in-maine_2012-09-02.html.
- 154 Source: United States Department of Education, National Center for Education Statistics, Common Core of Data (CCD), State Nonfiscal Public Elementary/Secondary Education Survey, 2011-12 v.1a. Retrieved December 1, 2014.
- 155 Comparisons with demographic composition of charter schools in the nation is also relevant since the virtual schools that enroll most students are charter virtual schools. Thirty-six percent of all charter school students are white, 29.2% are black, 27.2% are Hispanic, 3.5 are Asian, and 3.2% are classified as “other.”
- 156 Data on ethnicity is from 2011-12, the most recent year from which we could obtain NCES data. The NCES provides the most comprehensive data, all from a single audited source. We obtained more incomplete data on race/ethnicity, sex, free- and reduced-price lunch status, English Language Learner status, and special education status for 2011-12 and 2012-13 from state sources and from school report cards. The figures we present are based on the most complete data source, the NCES 2011-12 data. We comment in the narrative when we see noticeable differences from the data we have collected in subsequent years.
- 157 Bordelon, S. J. (2010). Making the grade? A report card on special education, New Orleans charter schools, and the Louisiana charter schools law. *Loyola Journal of Public Interest*.

- 158 Five of the virtual schools also had pre-K students and eight of the virtual schools had students classified as “ungraded” which are not depicted in this figure. In the national population, 0.2% of all students do not have a grade specified and are designated as “Ungraded.”
- 159 Note: United States Department of Education, National Center for Education Statistics, Common Core of Data (CCD), State Nonfiscal Public Elementary/Secondary Education Survey, 2011-12 v.1a.
- 160 The pupil/teacher ratios in 2010 and 2011 were both at 16.0. Keaton, P. (2013). Selected Statistics From the Common Core of Data: School Year 2011–12 (NCES 2013-441). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved December 1, 2014, from <http://nces.ed.gov/pubsearch>.
- 161 Education Data Partnership (2014). Adequately Yearly Progress under NCLB. Retrieved January 20, 2014, from <https://www.ed-data.k12.ca.us/Pages/UnderstandingTheAYP.aspx>.
- 162 Pennsylvania Department of Education. (2012) Academic Achievement Report. Retrieved December 1, 2014, from <http://paayp.emetric.net/>.
- 163 Center for Research on Education Outcomes. (2011). *Charter school performance in Pennsylvania*. Stanford, CA: Author.
- 164 Stetser, M., & Stillwell, R. (2014). Public High School Four-Year On-Time Graduation Rates and Event Dropout Rates: School Years 2010–11 and 2011–12. First Look (NCES 2014-391). Washington, DC: National Center for Education Statistics, U.S. Department of Education. Retrieved December 1, 2014, from <http://nces.ed.gov/pubs2014/2014391.pdf>.
- 165 Note that when we indicate national average or “USA” we are referring to the average for all public schools, including virtual schools which comprise a very small portion of the national set of schools.
- 166 Education Commission of the States (ECS) (n.d.). *Graduation Rate Goals*. Washington, DC: Author. Retrieved December 1, 2014, from <http://mb2.ecs.org/reports/Report.aspx?id=865>.
- 167 To offer a more accurate picture of 4-year on-time graduation rates, researchers from the *Education Week* Editorial Project (2013) used a method known as the Cumulative Promotion Index (CPI) based on the graduation rate file from U.S. Department of Education Common Core of Data. For more details on the results and methodology, see:
- Editorial Projects in Education (EPE) Research Center. (2013, June). *Graduation in the United States. Rate Approaching 75 percent*. Washington, DC: Author;
- Editorial Projects in Education (EPE) Research Center. (2013, June). *Diplomas Count 2013 State Graduation Briefs*. Washington, DC: Author;
- Editorial Projects in Education (EPE) Research Center. (2013, June). *Diplomas Count 2013: Second Chances--Turning Dropouts into Graduates*. Washington, DC: Author.
- 168 One source estimates the national graduation rate at 91.8%. This is based on the national average of state incremental goals toward 2014 graduation target for 13 states, published by the Education Commission of States.

Appendices

Appendix A: Summary of Legislation Pertaining to Virtual Schools, 2014

Appendix B. Numbers of Full-Time Virtual Schools and Students They Serve, by State

Appendix C. Virtual Schools in the Inventory and Characteristics of Students They Serve

Appendix D. Measures of School Performance: State Performance Ratings, Adequate Yearly Progress Status, and Graduation Rates

The Appendices as well as links to data sources are available for download as PDF files at <http://nepc.colorado.edu/publication/virtual-schools-annual-2015>