NEPC
NATIONAL EDUCATION POLICY CENTER

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

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May 2019

Executive Summary

This section draws from a comprehensive analysis of all proposed and enacted virtual school legislation in 50 states during the 2017 and 2018 legislative sessions, building on our earlier work detailing five years of legislative activity in the 2012-2016 sessions. We again focus on whether legislatures have been moving closer to or further from core recommendations advanced in this NEPC series, in addition to whether legislatures are informed by other research on virtual schools. Our analysis revealed a decrease in legislative activity in 2017 and 2018, yet state legislatures have continued to propose bills similar to previous years 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 III 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.

- Require high-quality curricula, aligned with applicable state and district standards, and monitor changes to digital content.
- Develop a comprehensive system of formative and summative 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 certification training and relevant teacher licensure requirements specific to teaching responsibilities in virtual schools, and require research-based professional development to promote effective online teaching models.
- Address retention issues by developing guidelines for appropriate student-teacher ratios and attending to other working conditions (for example, student attendance) that may affect teachers' decisions about where to work.
- Work with emerging research to develop valid and comprehensive teacher evaluation rubrics that are specific to online teaching.
- Identify and maintain data on teachers and instructional staff that will allow education leaders and policymakers to monitor staffing patterns and assess the quality and professional development needs of teachers in virtual schools.
- Examine the work and responsibilities of virtual school principals and ensure that those hired for these roles are prepared with the knowledge and skills to be effective, particularly with respect to evaluating teachers and promoting best practices.

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As evidenced in this series of policy reports, 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 continue to respond to challenges raised by virtual schooling, as evidenced by proposed bills that attempt to increase oversight of virtual schools; however, as we discuss below, fewer than 40% 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 below will revisit the critical policy issues introduced in our previous 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 and 2015 reports we shifted our focus to the legislative actions that illustrate how states are addressing evolving virtual school models. The last three annual reports analyzed legislation, examining all proposed and enacted virtual school legislation in 50 states from 2012 through 2016. The analysis in our early 2012 and 2013 reports served as a baseline that allowed us to identify and track trends in legislative activity

through more recent years in 2015 and 2016, and including the comprehensive analysis of all virtual school legislation introduced in 2017 and 2018, presented here. 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 unanswered empirical questions. Lastly, we revisit our policy recommendations and examine multiple data sources to gauge legislative progress toward them.

Comprehensive Analysis of 2015 and 2016 Legislation

Our comprehensive analysis of all proposed and enacted virtual school legislation in 50 states during the 2017 and 2018 legislative session employed the LexisNexis State Net/National Conference of State Legislatures (NCSL) Bill Tracking Database. We identified legislation using the keywords cyber, virtual, online, technology, non-classroom-based, distance learning, digital learning and blended learning.[1] Our analysis of bills targets new, revised or revoked programs specific to K-12 virtual education. The comprehensive analysis of bills provides a richer understanding of how legislators are promoting, revising and curbing evolving virtual school models as compared to previous years. In addition, the analysis over the past five legislative sessions has allowed us to track whether legislative trends are moving closer to or further from core recommendations advanced in this NEPC report series.

Our exhaustive analysis of bills for the 2017 and 2018 legislative sessions yielded the following: In 2017, 85 bills were considered in 34 states; 28 were enacted, 54 failed and 4 are pending (see Appendix A, which provides a comprehensive listing as well as summaries of relevant bills). In 2018, 42 bills were considered in 23 states; 17 were enacted, 19 failed and 6 are pending. In total, 32% of bills proposed in 2017 and 40% of bills proposed in 2018 were enacted. The raw number of bills introduced has decreased compared to previous years,[2] especially in 2018 where we tracked a significant drop. However the substantive focus on specific themes has remained consistent compared to our previous analysis of 2015 and 2016 bills (outlined in more detail below).

The marked decrease in legislative activity might be explained by policy, practice, and political factors that have emerged as virtual schooling continues to evolve. This activity may be related to continued legislative efforts in some states to establish task forces and commissions that are charged with studying the challenges of operating virtual school models, including governance, accountability, and funding (outlined below and in previous NEPC reports). Also, recent empirical research continues to highlight how academic performance of virtual school students is “significantly negative and large” compared to students in brick and mortar traditional and charter schools.[3] In addition, charter school advocacy associations including the National Association of Charter School Authorizers and the National Alliance for Public Charter Schools have expressed concern about virtual charter school accountability issues and the poor student achievement of virtual school students, and recently issued a report that advances recommendations to legislators aimed at increasing accountability of virtual school operations.[4] Collectively, these recent activities may be influencing a decrease in legislative activity; however, the precise reason for the slowdown is

not evident.

In 2017, 34 states considered legislation and 20 states enacted at least one bill. Much of the legislative activity on virtual schools occurred within a relatively small number of states: Pennsylvania (10), Oklahoma (7), Florida (7), Texas (5), Oregon (4), and Arkansas (4). In 2018, 23 states considered legislation and 13 states enacted at least one bill. Most of the legislative activity on virtual schools occurred in Michigan (4), Missouri (3), Oklahoma (3), and Virginia (3).

As in previous years, proposed legislation ranged from narrow to sweeping. However, three prevailing trends in the foci of bills persisted in this new analysis. In both the 2017 and 2018 legislative sessions a significant amount of legislation focused on pilot programs, task forces, oversight commissions, and state boards to study and oversee the development of virtual schools. There was also an increase in the number of bills focused on virtual school funding issues, where most bills proposed a reduction in funding. Lastly, there was a continued focus on student data privacy issues.

In 2017, 10 states proposed 13 bills on pilot programs, task forces, oversight commissions and state boards to study and oversee the development of virtual schools and their implications (AR, FL, CT, KY, MO, OR, TX, NY, PA, WV) and in 2018 nine states proposed nine similar bills (CT, KS, MO, NM, OK, UT, PA, VA, WI).[5] For example, the legislature in Pennsylvania proposed four bills in 2017 and 2018 (PA S670, PA S766, PA H2514 and PA S806) that called for the establishment of commissions or task forces to conduct studies related to cyber school finances, the actual cost of educating a cyber charter school student, cyber charter governance and accountability, and cyber charter student achievement. One bill (PA S670) also proposed a moratorium on cyber schools while the study was being conducted and results were reviewed by the legislature. None of these bills were enacted. Similarly, in Oregon (OR H2720) proposed that the Department of Education conduct a comprehensive study of virtual schools, including an assessment of student achievement, governance, and financial relationships between virtual schools and their sponsor, and an assessment of best practices in other states. The bill failed. Of the 23 total bills proposed in this domain across all states, seven were enacted, 13 failed, and two are pending.

Finance and accountability were also a continued significant foci for legislation in 2017 and 2018, consistent with legislative trends in previous years. In 2017, 11 bills were introduced in eight states (FL, KS, MO, MI, NH, NM, OH, OK) and in 2018, six bills were introduced in six states (CO GA, LA, MO, MI, NJ), aimed at reducing or limiting virtual school per-pupil resource allocations.[6] For example, in New Mexico (NM H454) the legislature proposed a 25% reduction in state equalization aid for virtual charter schools. Similarly, in Oklahoma (OK S101) the legislature proposed a 24% reduction in state aid for full-time virtual charter schools. Both bills failed. Of the 20 total bills proposed in this domain across all states, 4 were enacted, 12 failed, and 4 are pending. In a related domain, five bills aimed at limiting profiteering by virtual school operators were proposed in five states in 2017 (CA, IN, FL, MN, PA).[7] One bill was enacted, four failed and one is pending. In 2018, only one bill aimed at eliminating profiteering was proposed in California (CA H407). The bill restricts for-profit companies who petition for a charter after July 1, 2019, from operating or managing any new charter school.

Lastly, a significant amount of proposed legislation calling for protection of students' online data continued in the 2017 and 2018 legislative session. Student privacy protections are an important factor in the growth and development of online learning. Depending on how legislation is written and implemented, it may either inhibit the sector's growth by limiting vendors' ability to use student data or promote the sector's growth by effectively allaying parents' anxiety. In 2017, 12 bills were proposed in 12 states (AZ, GA, IL, MN, NE, NH, NJ, NY, PA, TX, UT, VA) and in 2018, four bills were proposed in four states (CT, HI, IA, MO).[8] The bills aimed at preventing online product providers who contract with districts or states from selling, renting, or disclosing student information and identifiers; prohibiting Internet providers and online product providers from using student tracking information for targeted advertising to students; and requiring districts to develop security protocols linked to recordkeeping and maintenance of student records. Across 2017 and 2018, eight bills were enacted: Seven bills failed and one is pending.

Two charts in Appendix A highlight the main themes covered by select bills addressing the three policy areas of finance and governance, instructional quality, and teacher quality. Analysis of the substance of select bills is integrated into the following sections with a focus on states exhibiting significant legislative activity and bills that address the three policy areas. Each section concludes with an assessment of how legislative developments during the past five years have moved policy closer to or further from addressing the critical policy issues outlined in our recommendations.

Finance and Governance

Our analysis reveals that legislatures continue to advance bills proposing task forces and oversight boards charged with overseeing the implementation challenges raised by virtual schools. Despite increased attempts to improve oversight and accountability of virtual schools by identifying funding, governance and accountability mechanisms that would allow better control, such improvements continue to challenge policymakers and practitioners. Also, there is limited evidence that reveals how and whether legislatures have attempted to adjust regulations overseeing virtual schools based on the findings and recommendations of past task forces, state studies and empirical research. However, there is substantive evidence that shows how state audits and legal challenges have revealed important challenges of operating virtual schools, which have led to legislative changes aimed at addressing accountability and governance structures, and also curbing the operation of for-profit virtual schools. These types of actions are evidenced in recent virtual school controversies in California and Ohio. In later sections we will detail how California curbed the operations of for-profit charter schools after a State Attorney General's report found dubious reporting of student attendance and illegal financing schemes that misused public funding (highlighted in our previous report). Also, in Ohio, a recent audit of the ECOT virtual school, the state's largest virtual charter which had over reported its enrollment over 9,000 students, resulted in the school's closing and calls from both state and federal legislators to address accountability, governance and funding mechanisms for virtual charter schools.

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 the 2017 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.	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.	Are local district educators 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.	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. Developing 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. As in previous reports we again highlight the work of Baker and Bathon (2013)[9] who developed a comprehensive methodology for estimating the actual costs of virtual schools. This research eclipses the limited recommendations made by other recent reports that have attempted to define a process for costing out virtual schooling.[10] Specifi-

cally, Baker and Bathon outline how costs in virtual schools vary widely compared to 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. As yet, no state has implemented a comprehensive formula that ties funding allocation directly to virtual schools' actual costs and operating expenditures, despite attempts in many states to propose legislation that attempts to curb or limit funding. But new evidence shows states engaging in a more methodical approach to measuring cost differentials between virtual and traditional schooling models in the legislative directives outlined for task forces and state studies; such efforts could directly inform policymakers. In addition, charter school advocates have increased pressure by calling for state legislatures to increase accountability demands on virtual charters, including a call for legislatures to align per-pupil funding allocations with the actual costs of educating virtual school students.[11]

Activity in 2017 and 2018, as in previous years, shows that legislation has been introduced—and in some instances enacted—that revises virtual school funding; in addition, new task forces and oversight committees have begun to study cost differentials. These activities suggest sustained attention by state policymakers on virtual school funding as an area requiring serious consideration. For example, in Pennsylvania, the legislature proposed bills calling for two committees and studies: Charter School Funding Advisory Committee (PA S806) and the Legislative Budget and Finance Committee Study (PA S670).[12] Specific to funding related issues, PA S670 called for a study that reviews "all aspects of the funding, operation and performance of all cyber charter schools in this Commonwealth in addition to examining whether approving more cyber charter schools may have an impact on existing cyber charters."[13] The bill goes further and calls for a moratorium on the approval of new cyber charters for an 18-month period after the completion of the study, in order to allow time for the General Assembly of the legislature to review the study and take appropriate action. The bill failed in June 2017, but one month thereafter the senate introduced a new bill that included the development of the Charter School Funding Advisory Committee (PA S806) charged with examining all laws and regulations pertaining to charter school funding. The bill provides specific instructions to study the process by which cyber charters are funded and assess the actual costs of funding a cyber charter student, the cost of operations, facilities and management, and special education. The comprehensive instructions and charge to engage in an investigation of cyber charter funding and other accountability mechanisms, are consistent with recommendations advanced by the Pennsylvania Auditor General in previous performance audit reports,[14] who has continually recommended developing systems to increase accountability on cyber charter operations and eliminate incentives that encourage profiteering by for-profit cyber charter management companies.[15] In 2017 and 2018 the Pennsylvania legislature proposed 12 bills linked with cyber charter schools (more than any other state); none of the bills were enacted.

In New Mexico, reports from recent commissions[16] have led to increased scrutiny of virtual charter school operations and prompted additional audits and reports that have led

to a school closure.[17] The most recent report from the Legislative Education Study Committee builds on previous findings and makes explicit recommendations to the legislature, including: "Developing a scale adjustment factor that reduces formula funding for virtual charter schools due to lower staffing and plant operations and maintenance costs compared with brick-and-mortar schools, or an alternative funding mechanism for virtual charter schools."[18] This and other recommendations were included in NM S26 which requests that the Legislative Education Study Committee together with the Public Education Department form a Virtual Charter School Work Group that will study alternative funding mechanisms for virtual charters in addition to other accountability elements. The bill failed.

Active legislation specific to revising virtual school funding was a trend consistent with developments in previous years. Kansas (S19) enacted an extension in its reduction of funding for half-time virtual students beyond the 2016-17 academic year to the previously set reduction, from $4,045 per half-time virtual pupil to $1,700. Georgia (GA H787) enacted a bill where state charter special schools that offer virtual instruction (charters authorized by the State Department of Education) are now eligible for only 25% of the state-wide average total capital revenue per full-time equivalent, while brick-and-mortar charter schools are eligible for full statewide average total capital revenue.

Attempts to curb funding failed in several states. In Louisiana (LA S95) the legislature attempted to reduce virtual charter school funding provided through the minimum foundation program by 25%. In Oklahoma (OK S915) there was a proposal to reduce the calculation of state aid for full-time virtual schools by 25%. In New Mexico, two bills proposed funding cuts for virtual schools, including a 25% reduction in specific categorical funds (NM H454) and a 25% reduction in state equalization aid (NM S305). Two bills aimed to reduce virtual school funding were also proposed in Michigan. The first bill (MH S217) was proposed in 2017 and failed, then a second bill with similar language was proposed in the 2018 legislative session, and also failed. Both bills proposed a 20% reduction in per-pupil funding based on the state foundation allowance for cyber charter schools after their second year of operation.

We are beginning to see states like New Mexico draw on evidence resulting from their own state studies, in addition to evidence emerging from research studies, as justification for attempts to reduce or align virtual school funding based on real costs. However, little evidence exists that such considerations are used in other state decisions. 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

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 and the quality of staff, materials and instructional programs— including 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.

Below, we outline how other states are attempting to address accountability challenges related to virtual school governance as well as limits on and boundaries for virtual school enrollments.

Governance: Several states focused on increasing accountability and oversight of operations unique to virtual schooling. For example, in Oklahoma (OK H1693) the state Board of Education is charged with developing alternative metrics and multimeasures of accountability unique to the virtual school model. In Indiana (IN H1001) virtual schools are now required to submit annual reports that include class size and ratio of teachers per classroom, as well as number of student-teacher meetings conducted in-person or by video conference. In Kentucky (KY H523) the legislature established the Digital Learning and Workforce Development Pilot Project that is tasked with identifying the new program's purposes, governance requirements, and student eligibility. The bill also limits expansion by permitting the authorization of only two new virtual school programs per academic year. And in Idaho (ID H279), new requirements for the process of starting or converting a new virtual charter school were implemented, including comprehensive accountability requirements linked to governance, teaching and learning mechanisms, teacher development, teacher-student interaction, and verification of student attendance. All four bills were enacted in their respective states.

A focus on who can authorize virtual charters and the specific accountability conditions that must be met by potential authorizers were considered in other states. For example, in Missouri (MO S360), district-level authorization would be limited to an accredited school district or charter school with a state annual performance report score of 70% or greater. In New Mexico (NM H454), new virtual charter schools cannot be authorized by a local school district, and existing virtual charter schools serving students outside their district boundaries would be required to renew their charters with the state commissioner. In addition, the bill proposed that virtual charter schools would be placed on probation if they do not meet at least a 35% of total possible points in annual student growth factors over three consecutive years. And lastly, in Colorado (CO S70), the legislature attempted to build on recommendations from the Online Education Task Force report[19] (whose charge was outlined in previously enacted bills). The new bill proposed that after January 1, 2018, the state Department of Education would no longer be the authorizer of multidistrict virtual schools, and instead authorizers could include "a school district, a group of school districts, board cooperative services, or the state charter school instate."[20] The bill would also require the Division of Online Learning to oversee a data collection effort to inform the new authorization process, including data on the operations of multidistrict authorizers, best practices in the field, and academic research on online education. All three bills failed in their respective states.

Enrollment limits and boundaries: Monitoring which virtual schools provide education services, and to which students, requires delineating enrollment zones and addressing capacity issues. Careful enrollment audits are also necessary to ensure that a student's resident district is forwarding appropriate local and state per-pupil allocations to a virtual school. Several bills in this analysis address these issues.

In Pennsylvania, two bills reintroduced provisions that attempted to address funding for cyber charter students who enroll in schools outside their resident district.[21] The first bill (PA H935) proposed that students who elect to attend a cyber charter outside their resident district, when a cyber charter already operates within their resident district, would not be eligible to receive Commonwealth or district funding and would be charged tuition. Another bill (PA H184) proposed that the Commonwealth provide funding for a virtual school student only if they attended a school district-sponsored virtual program, but would require parents to pay tuition if the student elected to enroll in a cyber charter school. Both bills failed.

Additional accountability and oversight issues complicated by enrollment boundaries surfaced in other bills. For example, in Arizona (AS H2077), attempts to preserve "academic integrity of pupils who participate in online instruction and allows a school district to challenge student examinations if not properly proctored by online school or online provider."[22] Specifically, if the resident district could determine that an exam was not properly proctored, it could require that the test be re-administered under appropriate proctoring protocols at the resident district. In California (CA A2011), a bill proposed lifting existing geographical restrictions for students attending a non-classroom-based charter school (virtual charter school). Existing law limits virtual schools enrollment from the county in which a virtual school operates and counties which share a contiguous border with the home county. Both bills failed.

The bills outlined in this section offer examples of attempts to slow or control the scaling-up of virtual schools while policymakers examine the issues virtual schools are raising, consistent with our report's recommendations. Overall, our analysis indicates that efforts to study virtual school governance issues in order to inform policy changes via task forces or commissions are becoming more common across several 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 2017 and 2018, 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 operated 28.9% of all virtual schools and served 63.9% percent of full-time virtual school student population.[23] K12 Inc. continues to be the largest of the for-profit virtual school providers, operating 72 schools and serving approximately 97,969 students in 2017-18—more than 31.8% of the estimated 308,437 full-time virtual school students in the U.S.[24] K12 Inc. profits in 2018 were a net $46.4 million and total revenues of $917.7 million[25], and profits in 2017 were a net $46.4 million and total revenues of $888.5 million,[26] compared to 2016 net profit of $21 million and total revenues of $872 million.[27]

Audits conducted by state legislative analyst offices and auditor generals, either mandated

by law or prompted by public calls for accountability, have uncovered important governance challenges in the for–profit virtual school sector. In previous reports we highlighted recent audits and the legal and policy challenges that ensued after results were consider by both policymakers and law enforcement. For example, the ongoing audits by the Auditor General of Pennsylvania have resulted in several school closures and criminal convictions of former cyber school operators.[28] In California, the State Attorney General's investigation of the California Virtual Academies (CAVA) operated by K12Inc. resulted in a legal settlement that required CAVA schools to return nearly $2 million dollars in taxpayers' funds to the state.[29] In the wake of the scandal, California enacted CA S406 in 2017, a bill that restricts for-profit companies who petition for a charter after July 1, 2019, from operating or managing any new charter school. The common thread in these widely reported audits and investigations is the lack of adequate accountability structures linked to how virtual schools account for instructional seat time and report student enrollment, which are used to calculate local and state funding for virtual school students. The slack accountability and perverse motivation of for-profit virtual school operators to capitalize on minimal state oversight has encouraged the profiteering that has resulted in these cases.

The latest in this string of cases is in Ohio and, like the other cases outlined above, the controversy centers around the electronic student seat time and enrollment accounting systems, known as login records. In September of 2016, the Ohio Department of Education completed an attendance audit of 13 e-schools (virtual schools) in Ohio, of which nine had over-reported enrollment.[30] The largest of these schools was the Electronic Classroom of Tomorrow (ECOT) virtual school, which had reported a full time equivalency (FTE) of over 15,322 students to the state.[31] However, the Department of Education attendance audit revealed that ECOT had over-reported their FTE by more than 9,000 students. All nine e-schools that were found to have over-reported enrollment appealed the attendance audit results. In October of 2016, the Department of Education sought repayment from the nine schools amounting to a collective $83 million dollars: The ECOT portion was more than $60 million.[32] The discrepancies discovered in the enrollment audits also triggered an additional audit in 2017, and in March of 2017, the Ohio Auditor of State began its own extended audit of ECOT and other e-schools in Ohio. Then in September of 2017, the Department of Education completed their 2016-17 academic year enrollment audit of ECOT and again found over-reporting of enrollment and ordered the school to pay an additional $19.2 million.[33] The Ohio Supreme Court agreed in September 2017 to hear the ECOT appeal, but in January of 2018, the ECOT School Board voted to close the school, stating that it was it was unable to pay the $80 million ordered by the Ohio Department of Education.[34]

The enrollment reporting dispute hinges on over-reporting of learning activities that the Ohio Department of Education permits to be counted as daily attendance, which includes "documented durational time for Internet and/or computer-based learning opportunities as non-classroom, non-computer-based learning opportunities."[35] In the ECOT case, the enrollment audit discovered that most students logged on for only one hour per day,[36] yet school administrators grossly over-reported daily hours engaged in learning activities in students' logs. The Ohio Auditor of State released its audit results of the 2016-17 academic year in May 2018, and echoed the Department of Education's earlier findings that ECOT administrators had over-reported enrollment. In the audit the state auditor firmly stated:

> Our auditors documented that ECOT officials had the ability to provide honest, accurate information to the state and they chose not to…by withholding information, ECOT misled state regulators at the Department of Education, and ECOT was paid based on that information. I believe this may rise to a criminal act.[37]

The state auditor also scolded the Department of Education for its incompetence in holding ECOT accountable and not requiring proof that students were actually engaged in learning, yet continuing to pay ECOT for 81.5 percent of its funding requests.[38] Lastly, the state auditor declared that "the department of education cannot be trusted to fix these problems. The General Assembly needs to act because what is happening remains unacceptable."[39]

The multiple audit findings prompted United States Senator from Ohio, Sherrod Brown, to urge the U.S. Department of Education Inspector General to investigate ECOT and seek repayment of $130 million in federal funds that had been paid to ECOT, as well as investigate the entire for-profit charter school industry.[40] He also expressed support of the Ohio Auditor of State's referral for criminal investigation of ECOT to the U.S. Attorney's Office for the Southern District of Ohio. Then in August, 2018, Senator Brown introduced federal legislation that would direct the U.S. Treasury Department to return any federal funds that might be recovered from ECOT to the school districts in Ohio that originally forwarded per-pupil funds.[41] Finally, Senator Brown urged the U.S. General Accountability Office (GAO) to investigate "policies and practices related to student experiences and outcomes in full-time virtual charter elementary and secondary schools."[42]

In 2018, new legislation proposed adjustments to the slack accountability issues that surfaced in the Ohio e-school audits. A bill that came to be known as the e-school safe harbor bill (OH H87) was enacted, which protects existing e-schools that are required to absorb thousands of displaced ECOT students from potential negative consequences associated with sudden enrollment increases. Specifically, e-schools whose enrollment increased by more than 20% in 2017-18 are exempt from counting the displaced students in their performance ratings for two years, in addition to not accounting for displaced student test scores if the school were to be subject to closing after three consecutive years of failing performance. The bill also ordered the superintendent of public instruction to establish standards for learning management software used by e-schools. A complimentary bill (OH S216) ordered the superintendent of public instruction to address the process by which to determine full-time equivalency for student enrollment, define student attendance, and define engagement in e-schools, including: documentation of online learning; idle time; educational and non-educational; participation; classroom. Lastly, the Ohio Auditor of State released an additional report in December of 2018 in which he recommended that a new system of funding e-schools be developed by the state.[43]

Other states also engaged the challenge of profiteering and advanced several legislative proposals. For example, Indiana (IN H 1382) enacted legislation similar to Ohio, calling for the adoption of a state student engagement policy for virtual charter schools. Virtual charter school governing boards are now required to adopt student enrollment policies that define attendance and the instructional activities that are counted as student engagement, including: online logins to curriculum or programs offered by the virtual charter school; offline

activities; completed assignments; testing; face-to-face communications with virtual charter school staff or service providers; meetings with virtual charter school staff or service providers via teleconference, videoconference email, text or phone.[44]

Other states attempted to curb profiteering by focusing on virtual school governance structures and explicitly defining financial and other conflicts of interest for administrators and governing board members. In Pennsylvania (PA H 97) a charter school administrator would be prohibited from receiving compensation from another charter school or an educational management service provider. In addition, no administrator or immediate family member could serve as a voting member on a charter school board of trustees, or participate in awarding a contract if a person has a conflict of interest. Another bill (PA S670) would explicitly prohibit a member of a charter school board of trustees from receiving payment for facilities lease arrangements between a charter school and a lessor. These bills reflect the recommendations of the Auditor General of Pennsylvania reports and attempt to address the profiteering that has been well documented and criminally prosecuted in Pennsylvania.[45] Both bills failed.

Legislative proposals aimed at curbing profiteering by for-profit virtual charter school operators have yet to resolve the needed accountability structures to disincentivize operators from capitalizing on their virtual school operation. Yet efforts by other state officials have shown some success. The actions of the state auditor in Ohio coupled with the resulting legislative action in 2018, as well as legislative proposals in other states, are consistent with our recommendation calling for policy or other actions by public officials 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 the evidence detailed above, we reiterate our recommendations from previous reports.

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 previous 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.[46] Here, we again review and update our earlier assertions. Table 1.2 reintroduces issues, assumptions and questions relevant to instructional quality.

Table 1.1 Instructional Program Quality Questions for 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.	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.	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	Students in virtual schools perform equal to or better than traditional peers and existing empirical work has adequately measured student achievement. Modest gains can be taken to scale.	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?

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"[47] and Clayton Christensen, who pioneered this concept, predicted that by 2018, half of all high school courses would be taken online.[48] Like many disruptive innovation promises before it, this prediction did not become reality. Based on legislative activity in 2017 and 2018, the disconnect in the online education industry between a growth explosion and a legislative gap only widened. Data available in 2016 shows 200,000 students were enrolled in virtual schools across 200 schools in 26 states,[49] while approximately four million students enrolled in one or more supplementary online courses each year.[50] Current data indicate that in the 2016-17 school year, 429 virtual schools in 27 states enrolled approximately 300,000 students; 76 percent of those students were enrolled in fully virtual charter schools.[51] Contrast that growth with only eight bills (and only five enacted)

in the 2017 and 2018 legislative sessions focusing on instructional program quality, and the gap becomes a chasm.

To comply with 21st century learning standards that require technological literacy, states range from requiring students to complete at least one online course, to requiring students to have an online "experience," and to encouraging schools to buy digital content rather than textbooks. However, the legislative scan indicated no new bills in this area in 2017 or 2018.

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 and parents often 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. According to a study by the Center on Reinventing Public Education (CRPE),

> The primary approaches to regulating online charter quality relate to entry barriers and oversight. States restrict the number of online schools permitted, regulate teaching credentials and other inputs, and impose additional application and oversight requirements. Few state laws provide charter authorizers with guidance to ensure robust performance outcomes or instructional quality in the online environment.[52]

In 2015 and 2016, legislators devoted some attention to mandating requirements for monitoring quality curriculum and providers in online environments. 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 the information and skills policymakers deem essential. In fact, a 2015 report states, "All states have included specific language to require that online school curricula align with state standards and assessments. This may be in response to the fact that many online charter providers operate across many states with different learning standards."[53]

In the 2017 report, we noted that several states were starting to focus on creating clearinghouses of reviewed and approved online courses and providers. In fact, in the 2015 and 2016 sessions, legislators considered 11 bills (five enacted, five failed, one pending) regarding clearinghouses. However, the focus on clearinghouses and online courses was not sustained, as there were no bills in this area considered in 2017 and 2018.

Ensuring Quality and Quantity of Instruction

Trends relating to the quality and quantity of virtual instruction include: seat time, competency-based education, course-level enrollment, blended learning, dual enrollment, credit recovery, and remedial coursework. However, legislative activity in these areas dropped sig-

nificantly in 2017 and 2018.

Seat Time: The national focus on higher standards, particularly a greater emphasis on critical thinking and skills-driven 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.[54] 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.[55] In fact, the 2015 Mathematica study finds that "three-quarters (76 percent) of online charter schools include courses that are self-paced rather than tied to the calendar. One-third of online charter schools rely exclusively on self-paced courses. Consistent with the prevalence of self-paced courses, the instructional method used most frequently in online charter schools is individualized, student-driven independent study. Schools reported that teacher-guided synchronous discussion (that is, students and teachers participating in discussion at the same time) is the next most frequently used instructional method for all grades. Collaborative learning is used less frequently, and lectures are not used frequently in more than one-fourth of online charter schools at any grade level."[56] "In most online charter schools, synchronous instruction occupies less time than it does in conventional schools. The difference is dramatic: students in the typical online charter school have less synchronous instructional time in a week than students in a brick-and-mortar school have in a day."[57]

The Ohio Competency-Based Education Pilot embraces this shift away from the Carnegie Unit of time, instead granting students credit based on demonstrated mastery, not on the amount of time focused on a subject. See discussion in the following subheading on the results of the Ohio pilot project.

In 2017 and 2018, it appears that the focus on seat time as a measure of engagement to promote learning shifted to a measure of enrollment and student participation to determine which students should be funded in the virtual schools in which they were registered. States have struggled with how to define attendance; a few methods for determining which students are enrolled include:

- Enrollment status: Students meet enrollment requirements such as, in Ohio, logging in "at least once every 105 consecutive hours" or in North Carolina, showing activity "in the past 10 consecutive days."[58]

- Login time: Students meet attendance requirements based on time logged into the school software program. Idaho calculates attendance based on the time a "student logs between 8am and 10pm Monday through Friday."[59]

- Student participation and engagement: Students meet enrollment requirements through evidence of participation or work, which may include "teacher contact, submitting assignments, participating in webinars or discussion, or attending tutoring sessions."[60] For example, in Colorado, virtual schools can track attendance based on participation and completion of tasks.

- Parent or learning coach report: This method is often used in conjunction with other reporting tools. For example, in South Carolina, parents must verify the annual number of educational hours.

- Performance or class competition: Students "must show progress toward specific weekly performance targets."[61] "In Idaho, attendance can be submitted as a percentage of the instructional program completed over a timetable set by the school."[62]

In 2017, four states took up legislation regarding enrollment in virtual schools:

- Indiana enacted legislation (IN H1382) that requires virtual charter schools to adopt a student engagement policy and specifies that a student who regularly fails to participate in courses may be withdrawn from enrollment.
- Oklahoma enacted legislation (OK S244) that addresses the attendance issue by directing schools to maintain attendance records for enrolled students and defining circumstances for student absences. Furthermore, it requires schools to submit a report upon a student accumulating a certain number of absences. For this definition, instructional activities include but are not limited to online logins to curriculum or programs, offline activities, completed assignments, testing, or interactions with school staff or service.
- Arizona enacted legislation (AR H1627) that requires a teacher to note daily attendance or absence of each student. It also mandates that students physically attend a brick-and-mortar school to take state tests and assessments required for the particular course.
- Wisconsin failed to enact legislation (WI S30) that would eliminate the requirement that a virtual school ensure its teachers are available to provide a minimum number of hours of direct pupil instruction and would prohibit the governing body of a virtual school from allowing a student to enroll in the virtual school during a semester in which the student has had four or more unexcused absences.

In 2018, only two enacted bills, both in Ohio, addressed seat time as a measure of enrollment and participation. Ohio S216 directs the superintendent to define full-time equivalency for students in an online school to determine student attendance and engagement. Working in conjunction with Senate Bill 216, Ohio H87, requires the use of learning management software to track student enrollment. This software can be used to assess moneys returned as a result of an audit of enrollment records.

This shift from a focus on seat time to assess student learning versus to determine enrollment has had significant consequences. For example, in 2016, the Ohio Department of Education modified its funding mechanisms for virtual schools.

> Previously, the state allocated money to virtual schools based on school-reported enrollment numbers. Now the state will only allocate funding for students who have documented coursework for at least five hours a day, either by being logged in to the online platform for five hours or self-reporting independent work offline.[63]

This change in funding allocations caused one of the state's largest virtual schools, Electronic Classroom of Tomorrow, to close in January 2018 when it could not repay millions after overcounting enrollment.

Competency-Based Education: Affecting both traditional and virtual schools, competency-based education (alternately called proficiency-based learning) is another continuing trend and is closely tied to the issues of seat time and individualization. Competency-based education refers to evaluating learning based on content mastery rather than passage of time. Competency-based education is certainly not limited to virtual schools and, in many ways, it is a perfect partner for virtual schooling with its AI-driven "mass customization" of education via computer. According to the National Conference of State Legislatures, "students advance and move ahead on their lessons based on demonstration of mastery. In order for students to progress at a meaningful pace, schools and teachers provide differentiated instruction and support."[64] Further, the International Association for K-12 Online Learning (iNACOL) and Council of Chief State School Officers (CCSSO) offered the following definition of competency:

- "Students advance upon demonstrated mastery.
- Competencies include explicit, measurable, transferable learning objectives that empower students.
- Assessment is meaningful and a positive learning experience for students.
- Students receive rapid, differentiated support based on their individual learning needs.
- Learning outcomes emphasize competencies that include application and creation of knowledge along with the development of important skills and dispositions."[65]

While not limited to virtual schools, challenges posed with competency-based education include a lack of flexibility with funding systems, data systems that were not designed for competency-based learning, local and state policies that define how credit is awarded based on traditional approaches to learning, and student data privacy concerns.

A scan of legislative data for 2016 and 2017 indicates no activity focusing on competency-based education strictly in online schools. However, in 2017, four states enacted legislation focused on competency-based education in general K-12 education: establishing grants (MI HB4313), pilot programs (NV AB110, SC HB3969), or a reimbursement program for early graduation (UT SB34).[66]

In 2017, we reported on enacted legislation in Ohio (OH H64), which established a Competency-Based Education Pilot to award $2 million in funding for five sites to design and implement competency-based models, defined as emphasizing "achievement over enrollment and encourag[ing] school districts to adequately address the personalized learning needs of each of their students."[67] The pilot further states, "Instruction is tailored to students' current levels of knowledge and skills, and students are not constrained to progress at the same rates as their peers. Competency-based education allows for accelerated learning among students who master academic material quickly and provides additional instructional support time for students who need it."[68] The December 2018 final report on the pilot study indicates inconclusive results based on an inconsistency in implementation and measurement methodology across the sites. However, the report provides positive indicators while acknowledging the evidence is not definitive regarding impacts on student academic outcomes.[69]

In Maine, a 2018 study of student-centered learning, again not focused strictly on virtual schooling, defined as encompassing "competency-based progression, personalization, flexibility in where and when learning takes place, and facilitation of key skills and dispositions such as agency and ownership" resulted in contradictory conclusions, most notably that exposure to proficiency-based learning had a positive association with increased student achievement but negative association with SAT scores.[70] Furthermore, the experiment in Maine faced widespread school, parent and legislative revolt and was eventually rolled back.

> Across the state, districts struggled to define what "proficiency" meant and teachers struggled to explain to students how they would be graded. Those challenges, plus strong backlash from parents, caused the state to scrap the experiment earlier this year, allowing districts the choice to return to traditional diplomas."[71]

Course-Level Enrollment: The issues surrounding quality and quantity of instruction may become more complex before they become clearer. The U.S. Department of Education has confirmed that many traditional high schools across the country do not offer the breadth and depth of courses required for college preparation and admission. In April 2018, the US Department of Education Office for Civil Rights released its 2015-16 Civil Rights Data Collection (CRDC), indicating significant inequities in access to a robust set of high school courses. Nationwide, 55 percent of schools do not offer calculus; thus, 25 percent of students nationwide cannot take calculus at their local school. In fact, one in five high schools do not offer Algebra I or higher and one in four schools do not offer biology or higher. These trends have become more dire since the 2017 report. Further, many rural schools cannot offer a wide range of AP classes or world languages. Therefore, to fill such unacceptable gaps, traditional schools are turning to online providers and driving growth in course-level virtual enrollment. In fact, as stated above, approximately 4 million students annually enroll in one or more online supplementary courses. Research indicates that "enrollments in language courses have grown more significantly than any other subject offered among state virtual schools and now account for about 12 percent of all state virtual enrollments."[72]A scan in 2017 and 2018 shows only one state-enacted legislation regarding Course Access. In 2018, Missouri enacted Senate Bill 603 to create the Course Access and Virtual School Program, which enables K-12 students to enroll in online classes through state-approved providers at the cost of their school district. The bill is intended to expand course access options for students, especially in rural and low socioeconomic districts.

While some states have initiated efforts to maintain an online catalog of approved courses, as discussed above, companies have also risen to the challenge. For example, Excel*in*Ed advocates Course Access, which is a blueprint for legislation and programmatic elements that states can use to expand course offerings across in class, online, and blended environments from multiple providers. The policies offer students "expanded curricular opportunities and alternatives that met their unique preferences, schedules and needs."[73] 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.[74]

Currently, 10 states (Virginia, Georgia, Florida, Michigan, Minnesota, Missouri, Louisiana, Oklahoma, Texas and Utah) have authorized by law and implemented a State Course Access program. Wisconsin and Indiana have authorized but not fully implemented Course Access while Rhode Island and Arizona have implemented programs similar to Course Access.[75]

Further complicating the issues surrounding quality and quantity of instruction and the legislation that guides education, course-level enrollment is also connected to Education Savings Account (ESA) legislation. According to EdChoice,

> Education savings accounts allow parents to withdraw their children from public district or charter schools and receive a deposit of public funds into government-authorized savings accounts. Those funds can cover private school tuition and fees, online learning programs, private tutoring, educational therapies, community college costs, and other higher education expenses.[76]

Currently, five states (Arizona, Florida, Mississippi, North Carolina and Tennessee) have enacted ESA legislation, beginning with Arizona in 2011. In 2019, just fewer than 19,000 students in these five states are using ESA funds for education.[77]

Blended Learning: Colorado has defined blended learning as "more than [a] technology-rich educational environment. Rather, blended learning is an instructional delivery model that provides students some control over their learning, whether it be the time, path, pace, or pace of learning, promoting greater personalization providing for deeper application of knowledge, and expanding opportunities for all students."[78] In Arkansas, the definition of blended learning has been extended to include students not interacting in-person with a teacher but meeting online with teachers twice per week for synchronous lessons and online class discussions.[79] According to Education Elements, "successful blended learning occurs when technology and teaching inform each other."[80]

Perhaps the strongest advocacy of blended learning legislation is found in Colorado law (CO H1222), enacted in 2016, the "Empowering Digital Learning for All Act." The legislation increases the investment in supplemental online courses and blended learning support, and it designates the Colorado Empowered Learning (CEL) organization to develop and administer a statewide plan for implementation through support for districts, schools and students. As a component of blended learning, Colorado is advocating supplemental learning, which it defines as "courses provided through digital content, led by a licensed teacher, and provided to students who are enrolled in traditional schools."[81] According to CEL, students in Grades 6-12 now have access to more than 200 courses in areas such as Advanced Placement, credit recovery, and career and technical education. CEL reports 1,858 course enrollments in the 2017-18 school year and projects more than 2,400 course enrollment in 2018-19.[82]

The legislative scan indicates minimal legislative activity in 2017 and none in 2018: One enacted bill in Texas (TX H2442) relates to calculating the average daily attendance for students in blended programs that supplement classroom time with applied workforce learning opportunities, such as internships and apprenticeships; one pending bill in New York (NY

A2265) seeking recommendations regarding the establishment of a statewide online and blended learning program; and one failed bill in New Mexico (NM H454) that would have codified only synchronous instruction in grades kindergarten through five.

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. The legislative scan for 2017 and 2018 found no bills focused on dual credit.

Credit Recovery and Remedial Coursework: For students who have failed courses or fallen behind for other reasons, including illness, lack of family stability, teen pregnancy, or previous substance abuse, the opportunity to make up high school credits in a non-traditional setting is critical to earning a diploma. Further, some colleges offer remedial coursework through online options for students who need to master high school concepts before tackling college-level work. However, providing avenues for credit recovery and remedial coursework did not drive the legislative agenda in 2017 or 2018 as no new bills were considered.

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 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.[83]

Advocates and for-profit companies have claimed that students in virtual schools perform equal to or better than peers in traditional schools.[84] However, the limited studies on the topic indicate otherwise. See Table 2.1, *Summary of research related to the effectiveness of virtual schools*, of this report for more detail on study findings. For example, a 2011 Stanford University-based Center for Research on Education Outcomes (CREDO) study 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.[85] The 2015 CREDO study, which currently remains the definitive analysis on the subject, is a comprehensive analysis of achievement for students in online charter schools, and is even more dire. The report finds that

> the majority of online charter students had far weaker academic growth in both math and reading compared to their traditional public school peers. To

> conceptualize this shortfall, it would equate to a student losing 72 days of learning in reading and 180 days in math, based on a 180-day school year.[86]

The Center for American Progress conducted a study, published in 2018, that compares the outcomes of for-profit virtual charter schools in Colorado, Idaho, Nevada, Ohio, and Pennsylvania against outcomes for other students in the same states. At a high level, the study found the following for for-profit virtual schools:[87]

- The for-profit virtual schools graduate about half their students, placing them among the lowest performing schools in their respective states.
- The for-profit schools underperform the state average for third-grade English language arts and eighth-grade math proficiency. "The difference between the scores varied significantly across the five states studied for this report – from 4 percent to 19 percent – but the trend was consistent."[88]
- Student academic growth at these schools was significantly below expectations.

However, even though the low performance of online school students suggests the need for stronger accountability, the trend in virtual schooling may be toward less state-level policy oversight. Even as more online course options are being incorporated, fewer states are changing policy to support the shift; schools and districts can easily contract with online providers outside of a policy framework.[89] Other factors further complicate efforts to measure student achievement. Consistent data have become more fragmented as states withdraw from common assessments, and parents are increasingly opting their children out of state testing.[90]

In 2017, five states addressed student achievement in virtual schools (one enacted, four failed). Idaho (ID H279) codified accountability requirements for opening a new virtual school to include governance, teaching and learning mechanisms, professional development, teacher-student interaction, and verification of student attendance. However, Minnesota (MN S1554) failed to enact legislation to establish an Online and Digital Learning Advisory Council that would have been charged with policy recommendations for online learning, including quality of online learning providers, effective use of technology, resources to assist parents in selecting enrollment options, methodology to personalize or differentiate learning for students, and professional development for teachers. Further, Mississippi (MS H216) failed to enact legislation that would require the state to establish a program to provide pre-kindergarten instruction via the Internet, including the daily delivery of real-time instruction. Oregon (OR H2720) failed to pass legislation that would have studied the success rates for students in virtual schools based on academic growth, graduation rates, test scores, or ranking systems. Finally, not limited to virtual schools, Pennsylvania (PA S670) failed to enact legislation relating to charter school applications, including measures for student academic performance.

In 2018, one failed bill in Oklahoma (OK S1291) referenced measuring the performance of virtual charter schools based on student assessments.

Interestingly, in 2018, while state legislators failed to address the quality of online schools, two US senators, Sherrod Brown and Patty Murray, requested that the Government Ac-

countability Office (GAO) review the policies and practices of full-time virtual schools. The letter expressed significant concerns regarding accountability, student outcomes. and funding in these schools and specifically asked the GAO to examine the following issues related to student achievement:

- Relationship between the growth rate of virtual schools and the recruitment procedures used, as well as the schools' academic performance
- Student outcomes including for subgroups of students
- Additional supports and accommodations available to subgroups of students
- Academic rigor of courses, including criteria for course credit, assignments, grade matriculation and graduation
- Measurement of attendance and participation[91]

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

Recommendations

The legislative focus on digital learning—including but not limited to virtual schools—has decreased significantly in 2017 and 2018, certainly not keeping pace with the dynamic online education marketplace. Our overall legislative analysis indicates little continued progress over the past two years in proactively addressing issues related to instructional program quality. Based on the preceding analysis, we reiterate our recommendations from the previous reports and add a recommendation regarding defining seat time versus enrollment. 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 formative and summative 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.
- Implement a nationwide longitudinal study across multiple providers and with interim data checkpoints to assess the quality of the learning experience from the student perspective.
- Delineate the definitions of adequate seat time to ensure subject mastery versus the conflation of enrollment and participation for the purposes of funding.

High-Quality Teachers

As technology continues to become part of the fabric of everyday life, teachers and students in all contexts need to develop the skills required to effectively utilize digital tools and online resources.[92] One would be hard-pressed to find a school in which technology plays no role in student learning or instructional delivery. As a result, technology use has been generally accepted as a key competency for educators, and the preparation and ongoing professional development of teachers reflects a greater emphasis on integrating technology into instruction.[93] That said, the context of virtual schooling in which students and teachers are typically separated in time and place introduces unique issues and challenges related to teachers and teaching. We still know little about how to identify quality teachers in virtual contexts, how to recruit and retain them, how to evaluate their effectiveness, and how to provide ongoing support to promote best practices. In all of these areas, practice continues to outpace the available empirical evidence.

Our previous reports have identified several policy issues, assumptions, and empirical questions that need to be answered (see Table 1.3). In this section, we revisit those topics in light of new empirical evidence and recent policy developments. We conclude with a set of recommendations.

Table 1.3. Teacher Quality Questions for Virtual Schools

Policy Problem	Assumptions	Empirical Questions
Recruiting and training qualified teachers	Instructional training and professional support tailored to online instruction will help recruit and retain teachers. Effective teaching in a traditional environment easily translates to an online environment. Teacher preparation programs and district professional development programs will re-tool to support online instruction demands.	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	Evaluation of online teachers can mirror that of teachers in traditional settings. Online teachers can support a large roster of students.	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?

Recruiting and Training Qualified Teachers

Teachers play an important role in virtual schools, despite the heavy reliance on technology and individual pacing in those learning contexts.[94] As a 2017 Evergreen report notes,

"Online schools have innovated in a variety of ways, but in most cases they remain based on teacher-student interaction, and in some cases student-student interaction."[95] The 2016 National Education Association's *Guide to Teaching Online Courses* identifies ongoing teacher presence and communication between and among students, teachers, and parents as key components of an effective online education environment.[96]

Since most online courses delivered by state virtual schools are led by teachers, the continued expansion of online education will require ongoing attention to recruiting teachers who are prepared to teach effectively in virtual environments.[97] Currently, most state virtual schools are disproportionately staffed by part-time teachers. In a 2017 report, 17 of the 19 state virtual schools reporting data on teacher type indicated that they rely more on part-time than on full-time teachers. Eight programs reported that they employ no full-time teachers, exclusively using part-time instructors.[98]

Evidence on virtual schooling identifies some of the factors that influence teachers' decisions to work in virtual schools as well as factors that virtual school administrators prioritize when hiring teachers. Based on survey responses from 325 online teachers, a 2015 study found that teachers working in virtual schools "tend to be self-motivated, place a high value on learning and education, and enjoy the challenge and the process of using technology for teaching."[99] Another 2015 study comparing online charter schools to brick-and-mortar charter schools affiliated with a charter school management organization found that in both types of schools, the top hiring priority is teachers' "willingness to work hard in support of the school's mission." The second most important factor in virtual schools is applicants' certification status, while in brick-and-mortar charters it is performance on a sample lesson.[100] Given that all states require that most online teachers-of-record be certified,[101] this finding suggests that there may be an undersupply of certified teachers applying for jobs in virtual charter schools, a situation that may be forcing virtual school administrators to focus more on basic qualifications than on other criteria related to quality and effectiveness (for example, experience teaching online courses, performance teaching a sample class, or college grade point average). More evidence on the adequacy of the supply of virtual teachers is needed.

The limited supply of virtual teachers may explain a finding from a 2017 report that many virtual schools use the online teachers available through the organizations that supply online courses and digital content to schools. However, some school districts, particularly those in larger metropolitan areas, are increasingly managing these personnel issues in an effort to control costs and build the capacity of their own teachers and administrative staff in the use of instructional technology.[102]

Recent research on the nature of teachers' work in online schools underscores longstanding concerns about how well the requisite knowledge, skills, and dispositions needed for teaching in traditional brick-and-mortar classrooms transfer to virtual settings. A 2015 study reported that online charter school teachers' responsibilities are more heavily weighted toward providing individual attention to students (identifying struggling students and grading student work, for example) rather than other tasks like developing curricula, planning lessons, and providing direct instruction. Purchased curriculum packages reduce many conventional teaching responsibilities because courses tend to be pre-designed, self-paced,

and involve few if any lectures.[103] According to the study, teachers in online charter schools spend an average of six hours or fewer each week on synchronous instruction, and even this is highly variable, making it difficult to pin down the nature of teacher work in an online environment and the training and professional development needed to support that work.[104] Further, the study found that few teacher preparation programs offer instruction and training in the methods for online teaching, and even fewer offer student teaching placements in online instructional environments. There are some exceptions. For example, Michigan Virtual University works with teacher preparation programs in the state "to shape pre-service teacher coursework and field experiences so that new teachers have the skills, attitudes, and dispositions to serve within this growing field."[105] And recent research indicates modest growth in online field experiences for teacher education students nationally, but these opportunities remain limited.[106]

As a result, most of the virtual school teacher respondents reported that any training that they received occurred after graduation, and most of the learning occurred on the job.[107] Nationally, 92 percent of online charters reported that their teachers participated in professional development, with more than half reporting online synchronous professional development sessions at least monthly. In a 2017 study of professional experiences of online teachers in Wisconsin, all virtual school teachers reported participating in training or professional development; most preferred unstructured professional development like mentoring and online forums over structured activities like graduate courses and workshops.[108] Teachers indicated that the unstructured professional development opportunities allow them to take "ownership of their own learning,"[109] but whether these unstructured experiences are effective is an open question.

Virtual school principals also have surfaced as a group warranting attention from researchers and policymakers. Principals are key to school effectiveness, in their roles both as managers and as academic leaders who evaluate and provide professional development for teachers and staff. A 2015 study found that almost half of online charter school principals reported that they had no prior experience teaching in an online setting, which raises questions about their ability to evaluate and provide instructional support to teachers.[110] We know very little about the supply, recruitment, and preparation of virtual school administrators.

In our review of 2017-2018 legislation, we identified a number of bills intended to enhance the technological skills of teachers through preparation programs and ongoing professional development. However, consistent with our analyses in previous years, much of the legislative activity applied generally to teachers in all settings, not specifically to teachers in virtual schools.

One set of bills in the analysis of 2017 and 2018 legislation addressed teacher pre-service preparation and licensure requirements. Few of these bills focused on programs specific to teachers in online schools (for example, WI A64 and AR H1646); rather, most of the legislation related more generally to including technology expertise in all teacher preparation programs. For example, an enacted North Carolina bill (NC S599) adopted professional educator preparation standards that require teacher candidates to demonstrate their ability to use digital and other instructional technologies to provide high-quality, integrated digital teaching and learning to all students. The bill also required proficiency in digital teach-

ing and learning in the requirements for licensure renewal. Interestingly, a failed North Carolina bill (NC H898) proposed that the University of North Carolina educator preparation programs collaborate with an experienced provider to develop and implement a comprehensive professional development strategy for teachers and for students in UNC educator preparation programs for the use of technology and digital resources as teaching tools for K-12 students. A bill passed by the Texas legislature (TX S 1839) requires the preparation of public school educators to include digital and technology literacy. An enacted bill in Oklahoma (OK H1576) requires coursework or training in the use of digital and other instructional technologies as a requirement for teacher education program accreditation. Lawmakers have also considered policy proposals to require the integration of instructional technology into teaching internships. For example, a failed Florida bill (FL S656) would have required "specialized training in clinical supervision and clinical educator training that includes content-specific strategies for integrating media and emerging technologies." While these bills focus on the training of all teachers, a bill enacted in Wisconsin (WI A64) addressed licensure for virtual teachers specifically, requiring that the governing body of a virtual charter school shall assign an appropriately licensed teacher for each online course offered by the virtual charter school. In contrast, a bill enacted in Arkansas (AR H1646) specified that "a highly qualified teacher who delivers digital learning courses under this subchapter is not required to be licensed as a teacher or administrator by the state board, but must meet the minimum qualifications."

As in past years, much of the legislative activity related to teacher proficiency in using instructional technology focused on promoting ongoing professional development to improve teachers' technological skills. Only a handful of states (for example, DC, ID, KS, LA, NC, and TX) require specialized professional development for online teachers,[111] and the majority of the bills considered during the 2017 and 2018 legislative sessions applied to the general teacher population. The Nevada legislature enacted a bill (NV S476) that provides high-quality professional development for teachers to improve pupil outcomes through the use of digital teaching and learning technology. An enacted bill in Oklahoma (OK H1576) adopts procedures to include digital teaching and learning standards in teacher professional development requirements to enhance content delivery to students and improve student achievement. As noted above, the failed 2017 North Carolina bill (NC H 898) would have required a collaboration between the University of North Carolina educator preparation programs and an experienced provider, to develop and implement a comprehensive professional development strategy for teachers and for students in UNC educator preparation programs to use of technology and digital resources. A failed Minnesota bill (MN S1554) would have required the Online and Digital Learning Advisory Council to study and make recommendations on development and support of effective online teaching using high-quality digital curriculum. A failed West Virginia bill (WV H2199) proposed that teacher professional development should include not only training on digital literacy solutions, but also integration of the solutions within the teaching and learning environment with the goal of improving student achievement. Enacted Utah legislation (UT H11) designates a grant program to support the development of teachers' digital teaching competency.

A handful of 2017 and 2018 bills recognized the importance of professional development on instructional technology for administrators as well as teachers. For example, an enacted bill

in Wyoming (WY S35) provides training and technical assistance to school districts, "including professional development for teachers and school administrators, for the delivery of distance and virtual education, and requires the specification of minimum professional development requirements for teachers utilizing virtual education methods to instruct students." A pending bill in Michigan (MI S2174) requires the Michigan Virtual University to allocate up to $500,000 to support the expansion of new online and blended educator professional development programs for teachers and school administrators. A failed West Virginia bill (WV H2199) proposed that professional development be included for administrators and curriculum directors, covering topics such as the best practices of creation, management, distribution, and maintenance of digital content within school systems.

As in our earlier reports, our analysis of legislative activity found little progress toward establishing and implementing requirements for the preparation, certification, and ongoing professional development of teachers working in full-time virtual schools. While policy reports have made recommendations for online teacher education and licensure requirements,[112] most of the 2017 and 2018 state legislation aimed at enhancing teachers' abilities to effectively use instructional technology applied to all teachers—a reflection of the proliferation of education technology in all types of schools. While recent research demonstrates that the responsibilities of online teachers are different than those of traditional classroom teachers, more work is needed to understand the specific roles of teachers in virtual schools and the preparation they need to be effective there. The same holds true for virtual school administrators. We also need better information on the demand for, and supply of, state-certified teachers working in online environments. In the current context where demand appears to exceed supply, virtual schools are likely to prioritize credentials over quality in teacher hiring decisions.

Evaluating and Retaining Effective Teachers

The issues of teacher evaluation and retention continue to receive much attention in policy and research related to traditional brick-and-mortar schools. Our previous reports have recognized the challenges of using conventional, albeit imperfect, tools for teacher evaluation in virtual settings. Due to factors like asynchronous instruction, limited (if any) face-to-face time, and student self-pacing,[113] neither standards-based evaluation tools with established rubrics to guide observation and evaluation of teachers' classroom performance,[114] nor value-added measures based on students' growth in standardized test scores, translate well to full-time virtual schools. Existing evidence does, however, provide some indication of how virtual teachers are monitored and evaluated. Most virtual schools report that their teachers are observed by peers (58%), master teachers (59%), or administrators (93%) at least once each year, though it is not clear how these observations are conducted in an online setting. Further, administrator observation of teachers in online charter schools occurs less frequently than in brick-and-mortar charter schools.[115] Existing research still offers little guidance on how best to evaluate the performance of virtual teachers, and the 2017 and 2018 legislation sessions saw no new legislative activity related to teacher evaluation in virtual schools.

Likewise, our analysis of teacher retention reveals limited empirical evidence and little legislative activity. The literature on traditional classroom teachers reveals that teachers who are more satisfied with their working conditions are more likely to remain in them. As a result, in past reports much of our attention to retention issues focused on factors identified in the literature as related to teacher satisfaction in virtual schools. That said, researchers have identified "a critical need to determine the job satisfaction of K-12 online teachers and identify the factors that influence satisfaction or dissatisfaction as they related to the teachers' intent to remain in the field of online teaching."[116] One notable factor in online settings is class size, but recent evidence also identifies other elements of workload and conditions for success as relevant.[117] Evidence based on teachers in one virtual school identifies three key factors that contribute to teachers' job satisfaction: (1) flexibility in when, where, and how they teach; (2) time to interact and communicate with individual students; and (3) conditions and support required for teachers to have a positive influence on student performance.[118] Given these findings, it is not surprising that a Wisconsin study identified student perseverance and engagement as the most pressing challenges for online teachers.[119] Likewise, teachers in the California K12 Virtual Academies have raised serious concerns about student attendance. One teacher, for example, indicated that "only a fraction of her 75 or so students regularly attend class, and she has no way of knowing if the others watch her recorded lessons."[120] This evidence is related to a broader finding based on national data that virtual school instruction tends to involve a "limited number of live contact hours and a lean staffing model."[121]

Generally speaking, class size and working conditions for teachers in virtual schools are not receiving policymakers' attention. On average, online charter schools continue to have substantially higher student-teacher ratios than their brick-and-mortar counterparts. A 2015 study reported average pupil-teacher ratio in online charter schools as 30:1 compared to 20:1 in brick-and-mortar charter schools and 17:1 in traditional public schools.[122] Class sizes in online schools are highly variable, with averages of 39 students per class in online elementary schools, 60 per class in middle schools, and 71 per class in high schools. According to a 2015 report, only five states (AR, CA, MN, NC, and OH) had imposed class size restrictions on online charter schools, and only one state required individualized learning plans for all students in those schools.[123]

Teacher compensation may also be a relevant factor in retaining online teachers. A recent study reports that

> part-time or adjunct teachers in state virtual schools are typically paid on a per enrollment basis, generally ranging from about $130 to over $200 per enrollment, based on factors such as experience and type of course. Full-time teachers are typically paid in a similar way and on similar scales as teachers in the traditional schools in their state.[124] Compensation policies and practices could have an impact on the recruitment and retention of online teachers.

The only 2017-2018 legislative attention to issues surrounding attendance and regular contact between students and instructional staff was a bill enacted in Idaho (ID H279) that revises requirements for the process of starting or converting a new virtual charter school, including comprehensive accountability requirements linked to governance, teaching and

learning mechanisms, teacher development, teacher-student interaction, and verification of student attendance. With respect to class size, one recent bill in Mississippi (MS S2622) that was not passed by the legislature limited the total number of students taught by an individual teacher in academic core subjects at any time during the school year to 150; however, the bill indicated that "a teacher who provides instruction through intradistrict or interdistrict distance learning or supervises students taking virtual courses will be exempt from the 150-student limitation."

Taken together, our analysis reveals some evidence on how virtual school teachers are evaluated and a broader notion of the factors that may contribute to their satisfaction (and perhaps retention). However, more empirical evidence is needed to understand how these activities are actually carried out in virtual settings (for example, how a teaching observation is conducted) and to identify how various practices might promote improved student outcomes. Largely absent from recent legislative agendas were issues of teacher evaluation, working conditions, and retention.

Recommendations

Quality teachers are a critical factor in realizing the promise of virtual education to improve both the efficiency and the equity of public education by harnessing technology's potential to provide cost-effective, broad access to high-quality instruction. But based on our legislative analysis, we conclude that little progress has been made over the past two years on issues related to teacher quality in virtual contexts. Given the increasing recognition of instructional technology's potential benefits, state legislatures have considered a number of bills related to the importance of educating all teachers in the effective use of technology and online resources. A number of states have enacted bills related to initial certification and, to a greater extent, ongoing professional development in these areas. That said, little attention has been given to the unique challenges related to ensuring an adequate supply of high-quality teachers in virtual schools.

Given the information above, we reiterate our recommendations from last year's report. Specifically, we recommend that policymakers, educational leaders, and researchers work together to:

- Define certification training and relevant teacher licensure requirements specific to teaching responsibilities in virtual schools, and require research-based professional development to promote effective online teaching models.
- Address retention issues by developing guidelines for appropriate student-teacher ratios and attending to other working conditions (for example, student attendance) that may affect teachers' decisions about where to work.
- Work with emerging research to develop valid and comprehensive teacher evaluation rubrics that are specific to online teaching.
- Identify and maintain data on teachers and instructional staff that will allow educa-

tion leaders and policymakers to monitor staffing patterns and assess the quality and professional development needs of teachers in virtual schools.

- Examine the work and responsibilities of virtual school administrators and ensure that those hired for these roles are prepared with the knowledge and skills to be effective, particularly with respect to evaluating and supporting teachers and promoting best practices.

Notes and References Section III

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2 In 2016, 113 bills were considered in 37 states; 33 were enacted, 60 failed and 20 are pending. In 2015, 98 bills were considered in 28 states; 36 were enacted and 62 failed. In 2014, 131 bills were considered in 36 states; 38 were enacted, 62 failed (31 were pending at end of legislative session). In 2013, 127 bills were considered in 25 states; 29 were enacted, 7 failed (92 were pending at end of legislative session). In 2012, 128 bills were considered in 31 states; 41 were enacted and 87 failed.

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6 In 2016, 12 bills introduced in nine states (AL, KS, LA, LA, MI, MN, NJ, OR, NC, PA, PA, PA) were aimed at reducing or limiting virtual school per-pupil resource allocations (seven failed and five are pending).

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*This is a section of **Virtual Schools in the U.S. 2019**, a multipart brief published by The National Education Policy Center, and made possible in part by funding from the Great Lakes Center for Education Research and Practice.*

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