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

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Executive Summary

This section draws from a comprehensive analysis of all proposed and enacted virtual school legislation in 50 states during the 2019 and 2020 legislative sessions, building on earlier reports detailing seven years of activity in the 2012-2018 sessions. We again focus on whether legislatures have been moving closer to or further from core recommendations advanced in this NEPC series, and on whether this or other relevant research is informing legislative action. Our analysis revealed a continued decrease in activity consistent with our 2017 and 2018 findings, although bills attempting to increase oversight continue being proposed. As in previous reports, we found little evidence to indicate that emerging research is informing legislative action. This section also analyzes bills specific to state responses to the COVID-19 health emergency in the 2020 legislative session.

Based on this review and analysis, it is recommended that policymakers:

- 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 support them, and provide adequate funding.

- Establish geographic boundaries and manageable enrollment zones for virtual schools by implementing state-centered funding and accountability systems.
- Develop guidelines and governance mechanisms to ensure that virtual schools do not prioritize profit over student performance.
- Require high-quality curricula, aligned with applicable state and district standards, and monitor changes to digital content.
- 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 checkpoints to assess the quality of the learning experience from the student perspective.
- Delineate the definitions of adequate quantity of instruction to ensure subject mastery.
- 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.
- 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 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 they 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 inherent challenges, in part by proposing bills intended to increase oversight; however, fewer than 25% of bills proposed were enacted in 2019 and 2020. In addition, little evidence suggests that emerging research is informing legislative actions.

Below we revisit critical policy issues introduced in our earlier reports, specifically:

- Finance and governance
- Instructional quality
- Teacher quality

Beginning with the 2013 report, we defined these areas and began surveying emerging research relative to them; then, in the 2014 report we shifted our focus to legislative activities characterizing how states were addressing evolving virtual school models. The last four annual reports have analyzed legislation, examining all proposed and enacted virtual school legislation in 50 states from 2012 through 2018. Early analysis of 2012 and 2013 bills served as a baseline allowing us to identify and track more recent trends, up to and including the comprehensive analysis of all virtual school legislation introduced in 2019 and 2020, presented here. We also add a new section specific to bills responding to the COVID-19 crisis in

the 2020 legislative session. In addition, we draw on our own research, recent policy reports and research, and popular press accounts. To provide context, we reintroduce and provide updates to critical policy issues, relevant assumptions, and unanswered empirical questions. To conclude each section, we advance policy recommendations and offer thoughts on next steps for research and policymakers.

Overview

Our nationwide, comprehensive analysis of all 2019-2020 proposed and enacted virtual school legislation drew on the FiscalNote Bill Tracking Database. Keywords searched were: cyber, virtual, online, technology, non-classroom-based, distance learning, digital learning and blended learning.[1] Our analysis sought bills targeting new, revised or revoked programs specific to K-12 virtual education. This analysis provides a richer understanding of how legislators are promoting, revising, and curbing evolving virtual school models compared to previous years. In addition, analysis of seven earlier legislative sessions allowed us to track whether legislative trends are moving closer to or further from our earlier recommendations.

We found that in 2019, 58 bills were proposed in 23 states: 17 were enacted, and 41 failed. (See Appendix III-A, which provides a comprehensive listing as well as summaries of relevant bills). In 2020, 59 bills were considered in 23 states: nine were enacted, 42 failed, and eight are pending. In total, 29% of bills proposed in 2019 and 15% of bills proposed in 2020 were enacted. The raw number of bills introduced continues to decrease consistent with a trend first observed in 2018, when a significant drop appeared.[2] However, as detailed momentarily, the focus on specific themes has remained constant since 2012.

In 2019, 23 states considered legislation and 13 states enacted at least one bill. Much of the activity occurred within a relatively small number of states: Oklahoma (11), Pennsylvania (7), Texas (7), Oregon (5), and Indiana (4). In 2020, 23 states considered legislation and eight states enacted at least one bill. Again, very few states—nearly the same as those in 2019—accounted for most activity: Oklahoma (19), Pennsylvania (6), Indiana (5) and Ohio (4). Consistent with findings in earlier reports, Pennsylvania and Oklahoma saw most activity both years.

Typically, proposed legislation ranged from narrow to sweeping. Three trends were significant, two continuing from previous years and one newly emerging. As in the past, many bills targeted funding issues, including costing-out virtual school models, proposals to reduce funding, and proposals to curb profiteering. Also similar to prior years, in the 2019 and 2020 legislative sessions a body of substantive legislation indicated interest in topics generally related to governance: pilot programs, task forces, oversight commissions, and state boards to study and oversee virtual schools. Some bills, not surprisingly, couple both governance and finance, as when a task force might have been proposed to investigate a particular funding issue. A third newly emerging trend was an increase in legislation specific to moratoriums or closures of virtual schools. In addition to these continuing and strengthening trends, also notable is an area where interest has been fading recently: Bills related to cyber security and student data privacy issues have decreased significantly.[3]

As is true for nearly all of recent experience, the COVID-19 pandemic has had a significant impact on legislation. As we examined specific bills and isolated their topics, we found that many addressed the issues of instructional and teacher quality in the context of a health emergency and nationwide school closures. Therefore, rather than providing an overview here, this report concludes with an analysis of COVID-19 related bills.

Three charts in Appendix III-A highlight the main themes covered by select bills. 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 eight years have moved policy closer to or further from addressing the critical policy issues outlined in our recommendations.

Finance and Governance

Despite increased attempts to identify funding, governance and accountability mechanisms to strengthen oversight of virtual schools, policymakers and practitioners continue to face challenges in these areas. Legislatures continue to advance bills proposing task forces and boards to oversee implementation challenges, although there is limited evidence concerning how and whether such attempts have been informed by the findings and recommendations of past task forces, state studies and empirical research. There is, however, substantive evidence that state audits and legal challenges have prompted continued efforts to improve accountability and governance structures and to address profiteering. In 2019-20, such efforts were especially evident in Pennsylvania and Oklahoma, as detailed below.

Linking Funding to Actual Costs of Virtual Schools

To date, and despite many attempts to enact legislation addressing funding issues, no state has implemented a comprehensive formula that ties funding allocation directly to virtual schools' actual costs and operating expenditures. Policy debates persist, both because of cost differences between virtual and traditional 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, our exhaustive search on this topic has not found an empirical study that accounts for the true cost differentials of traditional and virtual schools.[4] However, new evidence shows states attempting to develop a more methodical funding approach through directives for task forces and state studies intended to provide policymakers with reliable data to guide their decisions. Proponents of more finely tuned funding include charter school advocates, who have called for legislatures to align per-pupil funding with the actual costs of educating virtual school students.[5]

As in past years, and as new task forces and oversight committees have begun studying cost differentials, legislation has been introduced—and in some instances enacted—to revise vir-

tual school funding. Policymakers' sustained attention on virtual school funding makes clear funding is a key concern. The Pennsylvania legislature has consistently been a frontrunner in attempts to calibrate funding formulas as virtual charter schools have grown, yet their efforts to enact bills addressing funding have repeatedly failed.[6] With the governor's support, over the last two years the legislature has repeatedly called for changes in funding formulas for all charter schools.[7] Cases of mismanagement have fueled the push for reform. Eugene DePasquale, the state's Auditor General, has continually recommended developing new systems to increase accountability for virtual charters and to eliminate incentives for profiteering.[8] In January 2020, he declared that "The General Assembly should revisit Pennsylvania's charter school law—which I believe is the worst in the nation—to make sure our limited education funding is not being diverted to benefit private companies."[9] His investigation into Lincoln Learning Solutions' two charter schools uncovered several questionable accounting practices, including: a 148% pay raise for the CFO between 2014 and 2018; over $622,000 in expenses for lobbying the state legislature during the same years; and, an unusually high reserve fund of $81.8 million.[10]

In 2019, the Pennsylvania legislature proposed three bills that called for a wide range of actions linked to costing-out the operations of cyber charter schools. To determine the actual cost of educating students in virtual charters, one bill (PA HB 1450) proposed establishing a Cyber Charter School Funding Advisory Commission charged with studying virtual school operations as well as school finance laws in Pennsylvania and other states. Afterward, the commission would be charged with making recommendations for changes in the Pennsylvania charter school law to implement more appropriate funding formulas. Similarly, two additional bills (PA HB 1449 and PA HB 1612) proposed that the Legislative Budget and Finance Committee and the Department of Education, respectively, conduct comprehensive costing-out studies of all charter and cyber charter schools. Two bills in the state went beyond calling for such studies. A moratorium on the "formation and approval of new cyber charter schools and the expansion of existing cyber charters" was proposed to allow the Legislative Budget and Finance Committee time to conduct its study and disseminate results (PA HB 1449).[11] Another bill (PA HB 1897) called for the extreme measure of closing all virtual charters by the end of the 2020-21 academic year and suspending new applications for them. The bill also proposed allowing only districts to operate full-time cyber programs and restricting outside contracting for necessary support services to non-profit entities. As has consistently been the case in recent legislative sessions, all of these to address funding issues in virtual schools failed.

Costing-out was also of interest in other states, including Arizona and Oklahoma, during 2019 and 2020. In Arizona (AZ HB 2891), the legislature proposed that the State Auditor General "conduct and complete a cost study of Arizona online instruction in this state."[12] The comprehensive study would examine: "administration, technology, personnel and curriculum costs"; the percentage of online courses offered via synchronous instruction; and total funding supporting all online education in the state. Another bill (AZ HB 2526) proposed a progressive reduction in funding based on percentages of the base rate for students in traditional schools: 95% for the first 200 students; 80% for 201-1,000 students; and 60% for over 1,000. Both proposals failed.

In Oklahoma, two bills (OK HB 3065 and OK SB 1365) also proposed reductions in per-pu-

pil allocations. One bill (OK HB 3065) called for a flat rate drawn from all public and private sources not to exceed $3,500. A second bill (OK HB 1365) called for a 5% reduction in per-pupil funding for statewide virtual schools with enrollment over 5,000. Both failed. This is perhaps not surprising because although the legislature proposed 30 total bills in 2019 and 2020 relating to virtual schools and programs—more than any other state—only five were enacted.

While interest in making adjustments to funding based on real costs continues, little evidence suggests that policymakers are drawing on either the results from their own state studies or on evidence emerging from other research. Absent a wider empirical accounting of real costs, legislative proposals seem likely to continue to be fueled more by political motivation than by reliable evidence.

Identifying Accountability Structures

Governance accountability structures should ensure that all virtual school expenses and practices directly benefit students. Concerns include, for example, monitoring costs and 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, allow monitors to evaluate instructional time and outcomes. In a new trend observed across four states in 2019 and 2020, per-pupil funding would be linked to student performance.

For example, a bill in New Mexico (NM SB 429) proposed that a virtual charter school failing to meet student performance targets would be subject to a 10% reduction in funding until targets were reached. The bill included other performance-related measures, including a requirement that charter authorizers review grade-by-grade student performance when a charter petitioned for renewal. If a specific grade level failed to meet performance targets, the school would not be allowed to offer it for the next three years. The bill also would also limit enrollment in new charters to 200 students "until the virtual charter school has demonstrated to the commission's satisfaction that the virtual charter school's performance meets or exceeds its performance targets."[13] The proposal also limited charter terms to three years for both new and reauthorized schools, and for applications submitted in 2019 onward, only grades 5-12 would be offered. This comprehensive accountability bill failed.

In Oklahoma (OK SB 54), a proposal would require the state's department of education to examine monthly student performance reports and reduce payments based on a letter grade performance metric. Specifically, virtual charter schools would not receive payments for students who received a letter grade of F; for students receiving other grades, the school would receive a monthly payment for each course in which a student was enrolled equivalent to "one-sixth (1/6) of one-twelfth (1/12) of Three Thousand Five Hundred Dollars ($3,500.00)." An Indiana bill (IN HB 1204) proposed that schools be required to report whether enrolled students met the "minimum standards of educational activity" (including the amount of time each student was engaged in educational activities) and whether they participated in a statewide assessment. Based on these reports, the state would reduce tuition support using a formula taking into account the number of students who did not meet

both conditions. Another Indiana bill (IN SB 183) proposed requiring all virtual schools to report the "average projected per student cost"; the state would then calculate whether a projected cost would be less than 90% of the base rate for traditional students. If the 90% threshold were not met, the school would not be funded at the projected level.[14] And, a Nevada bill (NV SB 441) proposed that the State Public Charter School Authority be charged with "establishing a system for withholding a portion of funding from a charter school for distance education if the charter school fails to provide evidence of adequate academic progress of the pupils enrolled at the charter school."[15] The Nevada (NV SB 441) bill passed, while the others failed.

Delineating Enrollment Boundaries and Funding Responsibilities

Monitoring which virtual schools provide education services, and to which students, requires addressing capacity issues and delineating enrollment zones. 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.

A new legislative trend in 2019 and 2020 was evident in efforts to adjust virtual schools' enrollments or limit their growth. Legislatures have sought to cap or limit enrollment to address issues specific to both accountability and cost. In Indiana, one of two bills (IN SB 183) proposed a total student enrollment cap of 1,200 students beginning in the 2019-20 academic year. A second bill (IN SB 441) proposed two separate enrollment caps. For schools established before July 1, 2020, enrollment on that date would be the future limit; for those established after June 30, 2020, the limit would be 500 students. In Maine (ME LD 513), a bill proposed capping enrollment in all virtual charter schools at 1,000 students, and also prohibiting addition of grade levels beyond those not in a school's original charter contract. At odds with this trend toward greater restrictions, a North Carolina bill (NC SB 392) proposed expanding enrollment for schools participating in the state's virtual school pilot program. The proposal would eliminate the previous cap of 1,500 students in the first year of operation and eventual growth up to a maximum 2,592 students, allowing unlimited enrollment instead. The Maine bill was enacted, and the others failed.

As in previous years, legislative proposals on enrollment boundaries and limits persisted in 2019 and 2020. Delineating enrollment zones has proven challenging for students' resident districts, which must send tuition payments to virtual schools that may be geographically distant, complicating verification of student enrollment. Previous efforts by state legislatures to address this issue have consistently failed,[16] but a Nevada bill (NV SB 441) enacted in 2019 would prohibit virtual charters from enrolling students residing outside the district where the charter operates. A New Mexico bill (NM SB 429) proposed the same residency requirement, while also limiting local school boards from authorizing more than one virtual charter school. Two Oklahoma bills also addressed enrollment guidelines. The first (OK SB 1538) proposed that a student's petition to transfer to a statewide virtual charter school could not be denied "by the student's resident district if the resident district does not offer a full-time virtual education program that is equivalent to a program offered by the statewide virtual charter school."[17] The second (OK SB 1097) proposed that "beginning with the

2022-2023 school year, if a student wishes to pursue full-time virtual education, he or she shall be required to enroll in the full-time virtual education program offered by the student's resident district."[18] The bill in Nevada was enacted, and the others failed.

These bills constitute examples of attempts to slow or control the scaling-up of virtual schools while policymakers examine related issues, consistent with our reports' recommendations. Overall, we find that studies of virtual school accountability structures done via task forces or commissions to inform policy are becoming more common. Charged with identifying best practices for governance and delivery of online instruction, such publicly funded study groups may yield important information for policymakers and practitioners.

Limiting Profiteering by Education Management Organizations

In 2019 and 2020, legislators in several states responded to the complicated accountability issues and public controversies related to for-profit education management organizations (EMOs). These organizations provide a variety of products and services to virtual schools—including software and curriculum, instructional delivery, school management, and governance. As outlined in Section I of this report, virtual schools that have contracts with for-profit EMOs operated 38.4% of all virtual schools and served 64% percent of full-time virtual school student population. K12 Inc. continues to be the largest of the for-profit virtual school providers, operating 71 schools and serving 96,771 students in 2019-20—amounting to 29% of the estimated 332,379 full-time virtual school students in the U.S. K12 Inc. profits in 2019 were a net $62.2 million and total revenues of $1.01 billion[19] and profits in 2020 were a net $56.1 million and total revenues of $1.04 billion,[20] compared to 2018 net profit of $46.4 million and total revenues of $917.7 million.[21]

Slack accountability and perverse motivation of for-profit virtual school operators to capitalize on minimal state oversight has encouraged widespread profiteering and continually prompted calls for action. As a result, audits conducted by state legislative analyst offices and auditor generals, either mandated by law or prompted by public calls for accountability, have triggered legal and policy challenges for both policymakers and law enforcement. In California, Ohio, and Pennsylvania, profiteering has been an especially contentious issue for legislatures.[22] For example, ongoing audits by Pennsylvania's Auditor General have resulted in several school closures and criminal convictions of former virtual school operators—but past legislative efforts to curb damaging practices have consistently failed.[23] In fact, past proposals in multiple states have routinely failed, indicating the intransigence of the problem, although earlier California did enact a bill including restrictions on for-profit EMOs operating virtual charters, [24] and Ohio did enact one with new procedures for determining full-time equivalency, defining student attendance, and defining learning engagement.[25]

Several states made efforts to improve monitoring in these areas. Some proposed bills spelled out minimum requirements, or they defined what "counts" as attendance and engagement, collectively known as login records, which are used to calculate per-pupil revenue disbursements. In Indiana for example, two bills advanced requirements, but stopped short of defining what constitutes either. One (IN SB 567) proposed requiring virtual school authorizers to report their methodology for determining when students can be counted as

attending and engaged. Another (IN HB 1204) would require the department of education to define the minimum requirements for engagement during a semester or term. Only the first was enacted.

Other state legislatures attempted to provide more substantive guidance for school operators and authorizers. For example, in Nevada an enacted bill (NV SB 411) requires the State Public Charter School Authority to adopt standards for schools to collect and report data on: the frequency of interaction between students and their teacher; learning supports in a student's home and community; methods for administering test and exams; the time students spend on a computer, television or the internet as part of their program; the time required for a student to complete learning tasks; and, the number of lessons a student completes.[26] Similarly, a failed Missouri bill (MO SB 996) would have required a school to report to a student's parent or guardian the instructional activities that the student would need to complete, including: "(a) Online logins to curriculum or programs; (b) Offline activities; (c) Completed assignments within a particular program, curriculum, or class; (d) Testing; (e) Face-to-face communications or meetings with school staff; (f) Telephone or video conferences with school staff; (g) School-sanctioned field trips; or (h) Orientation."[27] And in Oklahoma, the legislature enacted the Virtual Charter School Reform and Transparency Act of 2020 (OK HB 2905), which addresses both attendance and engagement. Specifically, full-time attendance requirements are met when a student

> a. completes instructional activities of no less than ninety percent (90%) of the days within the quarter, b. is on pace for on-time completion of the course as defined by the governing board of the virtual charter school, c. completes no less than seventy-two instructional activities within the quarter of the academic year.[28]

The bill also defines instructional activities to include meetings with a teacher, completed assignments with grades factored into the student's semester grade, school-sanctioned field trips, and orientation. While these three bills provide additional guidance, they do not close the gaps associated with over-reporting full-time enrollment and under-defining learning engagement, the practices that have fueled profiteering by virtual school providers in many states.[29]

Another persistent trend specific to issues of profiteering is concern for governance structures and conflicts of interest. As in previous years, the Pennsylvania legislature proposed more bills in this area than any other state. Of three bills proposed, three failed. One (PA HB 2833) was an attempt to expand the requirement for public audit of EMOs and entities they contract with to manage governance, operations and management of a school: "Cyber charter schools, including cyber charter management companies and other entities that operate cyber charter schools, whether for-profit or not-for-profit, shall be subject to audit by the Auditor General."[30] Another bill (PA HB 1897) called for local school boards of a virtual education provider to disclose at a public meeting any conflicts of interest between the local school board and any third-party vendor engaged. And, a more comprehensive bill (PA HB 355) would have explicitly prohibited all charter school administrators, including virtual charter schools, from receiving any "compensation from another charter school or from a company that provides management or other services to another charter school." It would

also have prohibited charter school administrators or any of their immediate family members from serving as a voting member on the charter school board employing the administrator. And, it would have required a charter school board of trustees to be comprised of at least five nonrelated members.[31] Four additional bills addressing conflicts of interest and nepotism were proposed in New Mexico (NM SB 429), Oregon (OR HB 2763), Florida (FL SB 1746) and Oklahoma (OK HB 1395); only the Oklahoma bill was enacted.

And finally, in the 2019 and 2020 legislative sessions three bills addressed the issue of financial or material inducements. They would prohibit providing financial compensation or any promise of equipment or anything of value as an inducement for a student to enroll in a virtual school (TX SB 1455 and OK SB 761), or as an incentive to recruit new students to the school (OK HB 3066); all three bills failed.

Legislative proposals have yet to resolve the need for accountability structures that effectively eliminate profiteering. Yet, some efforts have succeeded. The proposals advanced in many the bills outlined above 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 to Ensure Effective Funding and Governance Mechanisms

While some state legislators have made efforts to address the important finance and governance challenges of operating virtual schools, a need remains for additional research to identify funding and governance practices that will increase accountability, identify 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 support them, and provide adequate funding.
- 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

As earlier reports have noted, 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.[32]

Virtual instruction advocates claim that virtual schooling will provide efficient, highly individualized instruction, reaching students who seek access to quality courses.[33] The era of COVID-19 brought an immediate shift to online learning for many students across the country and, indeed, around the world. In previous editions of this report, we disputed the accuracy of a prediction by Clayton Christensen, who pioneered the concept of online education as a "disruptive innovation,"[34] that by 2018, half of all high school courses would be taken online.[35] With the COVID-19 shift, this prediction is finally a reality. However, the question that remains to be answered is what does education—both brick-and-mortar as well as virtual—look like post-pandemic? What will be the new normal in K-12 education and what lessons will traditional schooling take from its dip into the world of virtual schooling? One prediction in *Forbes* declares, "The change will be permanent: educational activity will no longer be face-to-face or online but a blend, able to move from one to another immediately fluidly, continually, through a student's life, way beyond the school, college or university years."[36] Like Christensen's prediction above, the collective educational world shall see if the prediction in *Forbes* of a permanent change becomes a reality.

Based on legislative activity in 2019 and 2020, the disconnect in the online education industry between a growth explosion and a legislative gap only widened. Data available in 2016 show 200,000 students were enrolled in 200 virtual schools across 26 states,[37] while approximately four million students enrolled in one or more supplementary online courses each year.[38] As noted in Section I of this report, in 2019-20, 40 states had virtual or blended learning schools. In fact, 477 full-time virtual schools enrolled 332,379 students, and 306 blended schools enrolled 152,530 students. Contrast that growth with 10 bills introduced but only one enacted across five states in the 2019 and 2020 legislative sessions focusing on instructional program quality in virtual schools, and the gap remains a chasm.

Requiring High-Quality Curricula

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.

The industry claims that virtual learning is highly individualized. However, some education experts contest that claim, agreeing that while each student progresses at his or her own pace and with the program adjusting student assignments based on performance, that does not make it individualized. In fact, it is restrictive, with students allowed only one mode of instruction.[39] Students generally cannot choose options such as writing an essay, producing a play, or conducting independent research to cover the same content.

Further, 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 statewide virtual schools to local districts—and in var-

ious formats—ranging from individual courses to full grade-level curricula—authorizers and parents often have difficulty ensuring quality content in the 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 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.[40]

In the 2017 report, we noted that several states were 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 from 2017 to 2019. While not specifically related to full-time virtual schools, in 2020, Pennsylvania (PA SB 1273) failed to enact legislation to create a centralized online clearinghouse of kindergarten through 12th grade online courses that would be available to public schools, private schools, home schoolers, and the general public.

Like curricula in traditional schools, online curricula should be aligned with a designated set of standards to ensure that students' online learning experiences provide the information and skills policymakers deem essential. In fact, a recent report asserted that, "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."[41]

However, in 2019 and 2020, only four bills (one enacted and three failed) focused on monitoring virtual course quality. In Oklahoma (OK SB 55), a 2019 failed bill would have required a virtual charter school director to assess the degree to which courses offered met subject matter standards. In Pennsylvania (PA HB 1897), a 2019 failed bill addressed robust course offerings, graduation requirements, and grades. Oklahoma (OK HB 3400) enacted legislation in 2020 that requires the Statewide Virtual Charter School Board to provide high-quality online learning opportunities aligned with the subject matter standards adopted by the State Board of Education. And Mississippi (MS HB 1167) failed to enact legislation in 2020) that would ensure all subjects and grade levels offered through virtual instruction meet minimum curriculum standards established by the State Board of Education. This bill also aimed to ensure instructional and curricular quality through an accountability plan for courses and programs that meet the nationally recognized standards for K-12 online learning.

Ensuring Quality and Quantity of Instruction

Related to ensuring quality and quantity of instruction, it appears 2019 and 2020 have ush-

ered in shifts in practice but not in accompanying policy. Particularly, legislative activity related to seat time and competency-based education has continued to decline in 2019 and 2020.

Seat Time

Since the late 19th century, the amount of time that students spend in direct contact with a classroom teacher, measured in Carnegie Units of 120 hours of annual "seat time," has been understood as a measure of student learning.[42] This understanding and measurement of seat time has been challenged by critics who point out that the amount of time students spend in school does not necessarily guarantee how much they learn and that time-based measurements, in particular, are incompatible with virtual schooling.[43] Some states have moved away from using Carnegie Units as a measure of learning, but have retained the idea of using the time that students "attend" virtual school (which is, in effect, seat time) as a measure of enrollment. In this section of the report, seat time is discussed as it relates to organizing and delivering instruction. Not surprisingly, states have struggled with how to define seat time in virtual school settings. Some attempts include:

- 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."[44] 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 and engage in regular parent-teacher conferences in person or by phone.

- Performance or class completion: Students must progress toward specific performance targets. "In Idaho, attendance can be submitted as a percentage of the instructional program completed over a timetable set by the school."[45] New Hampshire now funds its online charter school based on the percentage of assignments each student successfully completes. If a course has 10 assignments and a student finishes eight of them, the school receives 80 percent of the funding.[46]

In 2020, the National Conference of State Legislatures referenced seat-time as a barrier to innovation because the amount of time needed to complete a course varies by student, and significant learning can occur outside the classroom."[47] Further, CRPE's Larry Miller and the Foundation for Excellence in Education's Matthew Joseph call for a "grand new bargain" to end funding based on seat time, claiming that the time has come for states to provide more flexibility on the location and timing of education, and to base funding on the quality of instruction the students receive. The authors further state that many school systems are awarding credit for learning through internships, volunteer activities, and independent study projects. However, districts can still use flawed measures like student logins, and the state provides no guidance on how much student progress is sufficient to earn funding."[48],

Even given these calls for extensive change in the traditional approach to K-12 education, states have not made substantive progress. Several proposed bills, as outlined in the Finance and Governance subsection, have begun to address the issue of seat time as it relates to defining attendance for calculating funding; however, alignment on what constitutes seat time, related to organizing and delivering quality instruction, is limited.

Competency-Based Education

Affecting both traditional and virtual schools, competency-based education 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. 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."[49]

In 2019, the Aurora Institute (formerly iNACOL) updated its definition of competency-based education as follows:

- Students are empowered daily to make important decisions about their learning experiences, how they will create and apply knowledge, and how they will demonstrate their learning.
- Assessment is a meaningful, positive, and empowering learning experience for students that yields timely, relevant, and actionable evidence.
- Students receive timely, differentiated support based on their individual learning needs.
- Students' progress based on evidence of mastery, not seat time.
- Students learn actively using different pathways and varied pacing.
- Strategies to ensure equity for all students are embedded in the culture, structure, and pedagogy of schools and education systems.
- Rigorous, common expectations for learning (knowledge, skills, and dispositions) are explicit, transparent, measurable, and transferable.[50]

In 2016, Illinois launched the Competency-Based High School Graduation Requirement Pilot Program, resulting in statutory changes in 2018 that enabled districts and collaboratives to apply. As of 2021, 25 sites in the pilot program represent 47 school districts. The Illinois initiative is intended to allow students to earn graduation credits in ways other than traditional coursework; incorporate real-world knowledge and challenges; and encourage students to gain career-related competencies. Comprehensive evaluation of the program is not yet available.[51]

Not surprisingly, competency-based education has both advocates and critics. While not

limited to virtual schools, challenges posed by competency-based education include inflexible funding systems, inappropriate data systems, local and state policies based on traditional instructional approaches, and student data privacy concerns. Further, competency-based education may inherently narrow both the curriculum and the allowed range of pedagogies to learning products that can be concretely or electronically measured without the subjective judgment of teachers. Many realms of traditional education cannot be easily defined or measured as "competencies" and, therefore, may fall out of a curriculum built around this model.

Finally, empirical data do not yet exist to fully support or negate a competency-based approach. A 2020 literature review of implementation and outcomes research from 2000 to 2019 found mixed results, including a negative correlation between competency-based education and lower math scores on state summative assessments as well as SAT scores. The literature review reflected "mixed results with respect to claims that CBE implementation supports (a) academic achievement and progress; (b) intrinsic motivation and engagement; and (c) other important academic outcomes." The review concluded, "Therefore, connections between CBE implementation and student outcomes are unclear at present."[52]

Even with this extensive movement toward implementation of competency-based protocols, there was no legislative activity specifically focusing on virtual schools in the 2019 or 2020 sessions.

Tracking and Assessing Student Achievement

As assessment of student achievement is complicated by increasing interest in mastery-based systems, 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 accountability systems must evolve accordingly. Research questions that arise include how to track outcomes from varied providers.

Advocates and for-profit companies have claimed that students in virtual schools perform equal to or better than peers in traditional schools.[53] However, there are a limited number of rigorous studies that evaluate the performance outcomes of online programs. Two comprehensive studies include the following:

- A 2015 Stanford University-based Center for Research on Education Outcomes (CREDO) study, still one of the most definitive studies to date, is a comprehensive analysis of achievement for students in online charter schools. 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.[54]

- The 2018 Center for American Progress study 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 for-profit virtual schools graduate about half their students, placing them among the lowest performing schools in their respective states. Additionally, 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."[55] Finally, student academic growth at these schools was significantly below expectations.[56]

More recently, in 2019, *Education Week* reported that nationally, "half of all virtual charter high schools had graduation rates below 50 percent in the 2016-17 school year." Further, of the 163 schools nationwide in the study, in Indiana "not a single virtual charter school operating in 2016-17 had a graduation rate over 50 percent in the past four years."[57] As stated in Section I of this report, 2019-20 graduation rates for full-time virtual schools improved slightly to 54.6 percent, though still significantly lagging the national average of 85 percent.

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 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.[58] Other factors further complicate efforts to measure student achievement. Consistent data have become more fragmented as states withdraw from common assessments, and parents increasingly opt their children out of state testing.[59]

The Education Commission of the States (ECS) found in 2020 that 25 states require no additional oversight specific to student performance in virtual charter schools. This excludes the five states that have not enacted charter school laws. States that do provide additional oversight include: Indiana, which requires virtual schools to adopt a student engagement policy; Louisiana, which requires more frequent performance reviews of virtual schools in their first three years of operation; and Ohio, which requires that virtual charter schools comply with the Aurora Institute standards for K-12 online learning.

Minimal interest on enforcing quality standards for student achievement in full-time virtual schools appears in legislation. Specifically, five bills failed to be enacted in 2019 and 2020. In 2019, Texas (TX SB 1045) failed to pass legislation to evaluate the performance of students enrolled in an online program separately from other students, New Mexico (NM SB 429) failed to pass legislation to require a charter authorizer to perform biannual performance reviews of virtual charter schools, and Oklahoma (OK SB 298) failed to enact legislation that would remove the ability to adopt alternative accountability systems for virtual charter schools. In 2020, Pennsylvania failed to enact two pieces of legislation: One (PA SB 1328) would have automatically triggered an evaluation of an online program if a student demographic performs below the average of the district in the same grade level, and another (PA HB 2720) would have required multiple measures for reporting AP achievement.

Recommendations to Ensure Quality of Instruction

The legislative focus on digital learning—including but not limited to virtual schools—has continued to decrease significantly in 2019 and 2020, 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. 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.
- 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 quantity of instruction to ensure subject mastery.

Ensuring High-Quality Teachers

Our previous reports indicated instructional technologies have been increasingly integrated in K12 education over the past several decades. In recognition of that trend, professional standards for teacher preparation now recognize the effective use of technology as a key competency for educators.[60] However, such theoretical competency has been sorely tested in practice over the past year as educators and students in brick-and-mortar schools have had to make an abrupt and radical shift to virtual and hybrid forms of education to mitigate public health risk of the COVID-19 pandemic. The pandemic has shown many students and teachers unprepared for an online learning environment, and it has further exposed the challenges and complexity of fully online teaching and learning. While well-established full-time virtual schools might have been expected to provide guidance for effective remote teaching, the relatively slow progress with respect to research and policy intended to ensure high-quality teachers for virtual environments continues as in the past.

There is still limited evidence on 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 available empirical evidence.

Our analysis of 2019 and 2020 legislative activity reveals several shifts in state policymaking around virtual teacher recruitment, training, evaluation and retention. First, legislative activity related to virtual teacher recruitment and training has decreased. Only four states considered bills directly addressing these issues; they all focused on holding virtual teachers

to similar certification standards as brick-and-mortar teachers, and they all failed. Second, compared to prior legislative analyses, we found fewer bills in 2019 and 2020 addressing professional development, but a larger proportion of those bills focused on teachers working specifically in virtual schools. Third, we noted an increase in bills over the past two years addressing factors that may increase virtual teacher satisfaction, retention, and success; several of these bills addressing student attendance, engagement and class size were enacted by state legislatures.

Recruiting and Training Qualified Teachers

Any discussion of teacher quality in virtual schools needs to consider serious questions related to what teacher quality is in a virtual setting and how important teachers are in the virtual school model. While virtual schools rely heavily on instructional technologies and online curricula, teachers continue to play an important role in those contexts.[61] Some have argued that an effective K12 online education requires teachers who actively engage students in learning activities and regularly communicate with parents about performance and expectations.[62] However, data on virtual school class sizes and synchronous instruction time suggest a diminished role for teachers and a greater reliance on self-paced online curricula and automated instruction and assessment. While evidence suggests that most online courses delivered by state virtual schools are led by teachers,[63] the role of teachers varies. The continued expansion of online education will require ongoing attention to defining teacher quality in virtual schools and to recruiting teachers who are prepared to teach effectively in them. Further, given the financial incentive for virtual schools to reduce costs by hiring less experienced and less qualified educators, strong policy is needed to ensure teacher quality standards.

The nature of teaching and the profile of teachers in full-time virtual schools differs from the traditional teacher workforce. For example, most state virtual schools are disproportionately staffed by part-time teachers. A 2019 report found that 15 of 18 virtual schools reporting data on teacher type relied more on part-time than on full-time teachers.[64] Six programs reported that they use part-time instructors exclusively. Florida Virtual School is a noteworthy exception, with the vast majority of their teachers working full-time.[65]

While some virtual schools hire their own teachers, many rely on the online teachers available through organizations supplying online courses and digital content to schools. Some school districts, particularly those in larger metropolitan areas, are increasingly managing their own teachers and administrative staff in an effort to control costs and build internal capacity for the use of instructional technology.[66]

Research on virtual schools has identified some characteristics of teachers who work in them as well as factors that virtual school administrators prioritize when hiring. A study of 325 online teachers found that in virtual environment, teachers "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."[67] Another study comparing online to traditional schools found that in both types, administrators most valued teachers' "willingness to work hard in support of the school's mission" when hiring. The second highest priority in virtual environment was

applicants' certification status, a difference from traditional environments where performance on a sample lesson took second place in priorities.[68] Given that all states require most online teachers-of-record be certified,[69] the emphasis on certification in hiring teachers for virtual schools suggests there may be too few certified teachers applying, which may be forcing virtual school administrators to focus more on basic qualifications than on other criteria likely related to teacher quality and effectiveness (for example, experience teaching online courses, performance teaching a sample class). However, some contend that it may not be quality concerns driving teacher credential requirements, but instead the political interests of unions and other stakeholders. Authors of one report argued that "such provisions are often concessions to labor groups or in response to scandals, rather than intentional efforts to drive quality."[70] It appears that while it is possible that too few credentialed teachers are choosing to work in virtual schools, it is also possible that virtual school administrators prefer to emphasize basic credentialling requirements rather than other quality indicators potentially associated with higher salaries.

Recent studies have also examined the competencies and skills needed to teach in online environments and have shown them to be distinct from those needed in traditional in-person classrooms. A 2018 article synthesizing existing literature identified seven global competency domains for online and blended teaching: pedagogy, management, assessment, technology, instructional design, dispositions, and improvement.[71] Recognizing the very limited evidence base, the authors raised questions related to how well virtual teachers are prepared to teach students working at different paces, interpret and use data from software packages, assess and grade students based on mastery, facilitate online discussions, and navigate different learning management systems. While the study was not focused on preservice teacher education, the competencies identified might be valuable to preparation for teaching in online environments.

At the moment, it is questionable that such preparation is adequate. A 2016 review of research on teacher preparation for online teaching identified three intersecting domains: content knowledge, pedagogical knowledge, and technological knowledge.[72] The authors found few programs designed to prepare teachers across those areas, with programs varying widely in content and learning experience. Another 2016 study confirmed that few teacher preparation programs offer training in online teaching methods, and even fewer offer student teaching placements in online environments. Such opportunities for online experience have grown modestly, [73] but the recent shift to online learning due to COVID-19 has likely accelerated further growth over the past year. Most virtual teachers report that much of their learning occurred on the job,[74] and preferred unstructured professional development like mentoring and online forums over structured activities like graduate courses and workshops.[75] While teachers indicated that such unstructured opportunities allow them to take "ownership of their own learning,"[76] whether they are effective is an open question.

In terms of the work required in virtual environments, one 2015 study found that online charter school teachers tend to spend less time developing curricula, planning lessons, and providing direct instruction than their brick-and-mortar counterparts.[77] This is not surprising, given that commercial curriculum programs reduce many conventional teaching responsibilities (for example, lesson plans and direct instruction). Online teachers' time allocations are more heavily weighted toward providing individual attention to students, in-

cluding identifying struggling students and grading student work. While this finding seems consistent with the emphasis of virtual education on individualization, other evidence on the amount of time that teachers spend with students and the automation of instruction and assessment raise questions about how meaningful and effective this individual attention is. The 2015 study found that teachers in online schools spend an average of only six hours or fewer each week on synchronous instruction, and even this is highly variable, making it difficult to characterize teacher work in an online environment and the training and professional development needed to support it.[78]

Our analysis of 2019-2020 legislation on virtual schools identified only a handful of bills directly addressing teacher recruitment and training and they all focused on certification and licensure requirements. Four bills required virtual teachers to meet the same certification standards as regular public school teachers. For example, an unsuccessful bill (MD HB 536) introduced during the 2019 Maryland legislative session proposed requiring "a virtual learning program of a public charter school to employ a teacher with the same certification required by professional staff in other public schools." A version of this bill was reintroduced in 2020 (MD HB 724) and also failed. An unsuccessful 2019 Texas bill (TX SB 1455) that focused on teacher qualifications in full-time virtual schools specified that teachers should be certified to teach in the assigned course and grade level. This notion of in-field teacher certification has been an important consideration in K12 public school policy for many years and was a hallmark of the "highly qualified teacher" provision of the 2004 federal No Child Left Behind legislation. An unsuccessful 2020 Oklahoma bill (OK SB 1100) would have required that the Statewide Virtual Charter School Board provide oversight of the operations of virtual charter schools, including the subject certification of teachers. A failed 2020 Mississippi bill (MS HB 1167), "The Digital Access Learning and Virtual Instruction Program Act of 2020," addressed a range of issues in virtual education including teacher quality. The bill called for the utilization of "highly qualified teachers to deliver digital access learning or virtual instruction to public school students" and specified that "a highly qualified teacher that delivers digital access learning or virtual instruction under this act must meet all qualifications for licensure in the State of Mississippi." None of these bills passed in the 2019 or 2020 legislative sessions. While this legislative activity could represent an interest in ensuring a basic qualification standard for teachers in virtual settings, it is not at all clear that certification standards for traditional schools ensure quality in virtual settings.

In addition to the bills focused on teacher certification and licensure, several bills in the 2019 and 2020 legislative sessions addressed ongoing professional development for virtual instruction. In past legislative analyses, most of the teacher professional development bills applied generally to teachers in all settings, not specifically to those working in virtual schools. Compared to prior years, the 2019 and 2020 legislative analysis revealed a smaller number of bills addressing professional development, but a larger proportion of those bills focused on teachers working specifically in virtual environments. This shift may reflect an increase in full-time virtual schools and a growing recognition that teachers need professional development to be effective in those settings. Four bills identified in our analysis of 2019 and 2020 legislation focused squarely on professional development for teachers working in virtual schools. The failed 2019 Texas bill mentioned above (TX SB 1455) would have required teachers in full-time virtual schools to successfully complete an "appropriate

professional development course." An unsuccessful 2020 bill in Indiana (IN HB 1172) would have required licensed teachers working in a virtual education program to comply with mandatory licensed teacher training. Two professional development bills were successful. Legislation introduced in 2019 in Oregon (OR HB 2022) established the "Oregon Digital Learning Academy." The Academy replaces the former Oregon Virtual School District with an expanded purpose of providing professional development related to online learning. Enacted 2019 legislation in Indiana (IN SB 567) required that the state board adopt rules governing the operation of virtual charter schools, including professional development for teachers.

In addition, three bills in our 2019 and 2020 analysis addressed the professional development needs of teachers more broadly and the provision of online platforms for offering professional development opportunities. A successful 2019 bill in Maine (ME LD 576) established a working group to study and develop an online platform "to facilitate the provision of online, virtual instruction by state-certified teachers to students in every public school in the State and the provision of a variety of high-quality professional development opportunities to educators across the State." A failed 2019 bill in Alaska (AK SB 114) proposed the establishment of a virtual education consortium for the purpose of making virtual education and professional development resources available to students and teachers throughout the state. The consortium would have provided "training and professional development on virtual instruction methods and the differences between virtual instruction and instruction offered in a classroom." This explicit recognition of the distinction between virtual and face-to-face teaching methods is unique in our legislative analyses over the years. In contrast to the increasing standards and opportunities for professional development in virtual teaching and learning, a failed 2020 bill in Indiana (IN HB 1263) proposed to remove state school board authority over teacher professional development and to decentralize these decisions to schools including virtual charters. This bill also proposed to eliminate state professional development requirements for teacher licensure.

As in our earlier reports, our analysis of legislative activity found limited progress toward establishing requirements for the preparation and ongoing professional development of teachers working in full-time virtual schools. More work is needed to understand the distinct nature of teachers' work in virtual schools and the preparation they need to be effective in those settings. Further, we need better information on the demand for, and supply of, teachers working in online environments to guide policy on how best to recruit and prepare virtual teachers who can support student success.

Evaluating and Retaining Effective Teachers

Evaluating and retaining effective educators in virtual schools continues to be an issue needing greater research and policy attention. 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 face-to-face time, and student self-pacing,[79] neither standards-based evaluation tools with established rubrics for observation[80] nor value-added measures based on students' growth in standardized test scores translate well to full-time virtual schools. Most virtual schools report that 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 occurs less frequently than in brick-and-mortar schools.[81] Existing research offers little guidance on how best to evaluate the performance of teachers in virtual settings, and as in previous years, there was no new legislative activity in 2019 and 2020 legislative sessions.

Assuming quality teachers can be identified, the retention of those teachers should be an important consideration—although it is not at all clear that virtual school operators consider teacher retention a high priority. Research on traditional classroom teachers reveals that those who are more satisfied with their working conditions are more likely to remain in their jobs and in the teaching profession. As a result, in past reports much of our attention focused on factors that research identified as related to teacher satisfaction in virtual schools. Research on job satisfaction, organizational commitment, and turnover intention among teachers working in K-12 virtual schools has identified class size, workload, and conditions for success as relevant to retention in virtual environments.[82] Another study, this one of teachers in one virtual school, found three key factors contributing to 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 positively affect student performance.[83] Given these findings, it is not surprising that a Wisconsin study identified student perseverance and engagement as the most pressing challenges for online teachers.[84] 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."[85] 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."[86]

Compensation is also a relevant factor. The majority of virtual classroom teachers are part-time and their compensation is based on student enrollment, generally ranging from $130 to over $200 per student, depending on their experience and the type of course. Full-time compensation is typically structured like the pay scales of brick-and-mortar schools in the teachers' states. [87]

While the 2019 and 2020 analysis identified no bills directly addressing retention, we did identify a number of bills addressing teacher satisfaction in virtual schools and potentially affecting retention. Five bills addressed virtual school student attendance and proposed consequences for truancy or failure to participate. Three were enacted (OK HB 2905, OH HB 409, LA HB 321), one failed (IN HB 1172), and one is pending (OH SB 292). Two state legislatures also considered new laws regarding student engagement, seat time and expectations for participating in instructional activities, but both bills failed (IL HB 1204, MO SB 996). Three bills addressed class size in virtual schools; one of these bills was successful (IN SB 567) and two failed (IN SB 183, NC SB 392).

In sum, the research and legislative activity over the past two years remained quiet with respect to virtual teacher evaluation, but included a number of bills addressing factors that have been associated with teacher satisfaction, and a handful of those bills were enacted

by state legislatures. Policies on virtual school student attendance, engagement, and class size—if they are designed to create more favorable workload and conditions for success—may have a positive effect on teacher satisfaction and retention.

Recommendations to Ensure Teacher Quality

Regardless of whether schooling occurs in person, online, or in a blended format, high-quality teachers are an essential ingredient in effective K12 education. However, limited research exists on the knowledge and skills that teachers need to be effective in virtual settings, the supply of and demand for online teachers, and the factors related to retaining quality virtual teachers. Evidence on these issues is needed to guide educationally sound policy on the preparation, professional development, evaluation and retention of quality virtual teachers. Further, our legislative analysis demonstrates that little progress has been made over the past two years on issues related to teacher quality in virtual contexts. A handful of state legislatures introduced bills related to the certification and ongoing professional development of virtual teachers, and several considered, and in some cases enacted, new laws and reporting requirements that may increase the satisfaction and retention of virtual teachers.

Given these findings, we reiterate a number of recommendations from previous reports. 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 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 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.

2020 COVID-19/Virtual School-Related Legislation

Overview

The onset of the COVID-19 pandemic in early 2020 had a significant and abrupt impact on education across the United States, in ways many education leaders and policymakers had never experienced. The pandemic prompted states nationwide to swiftly transition most traditional brick-and-mortar schools to remote/online learning. Face-to-face and online teaching and learning vary enormously and are significantly affected by available funding. Even schools that had already adopted online learning platforms or education technology, however, were unlikely to be prepared to operate essentially as a fully functioning virtual school this past year.

While we traditionally have looked at bills related to full-time virtual schools, we needed to broaden our focus to include bills intended to support schools that had involuntarily moved to sudden and heavy reliance on virtual instruction. In most states, pandemic-related bills included appropriation of new funds and orders to *implement* online/remote learning, while in others, bills were attempts to adjust school expectations to accommodate imminent ambiguity. This analysis provides a first glimpse into the substantive interventions that states attempted in response to the emergency. While there were attempts to provide necessary support for full-time virtual schooling, they may have stopped short of fully accounting for the mechanisms, practices, and resources needed.

The analysis of all 2020 legislative bills created or amended in response to the pandemic employed the databases of OpenStates.org, Education Commission of the States (ECS), and the National Conference of State Legislatures (NCSL) Bill Tracking services. Keywords used included cyber, virtual, online, technology, nonclassroom based, distance learning, digital learning, and blended learning; additional coding included COVID-19, pandemic, and/or emergency. Based on dates of introduction aligning with crisis conditions, a few bills that addressed remote learning protocol under the event of temporary school closure or a public health crisis were included, even though they lacked pandemic-specific language.

Across 19 states, 80 bills coded for connection to the pandemic were identified. Of those 80, 29 were discarded because of duplication or because they did not apply to virtual school practices. In total, 51 bills were analyzed, including 18 that were enacted (35.3%), 18 that failed (35.3%), and 15 that are still pending (29.4%). Appendix III-A provides a complete list of bills that were included in this analysis. Because school conditions changed rapidly at the onset of the pandemic, including the timeline of bills helps provide a more complete picture of legislative activity. Attempts to address challenges of sudden online schooling began in February of 2020 with five bills; they rose in March, April, and May, with seven bills each month; they peaked in June with 12 bills. Hence, nearly three-quarters of the year's legislation were packed into the first half of 2020, excluding January. Remaining months saw fewer bills introduced: four bills in August marked the beginning of the next school year, followed by three in September, one in October, and two in December. Clear frontrunners among states included New Jersey with nine bills, followed by Minnesota with seven, North

Carolina with six, Michigan with five, and Massachusetts with four.

In total, 18 major themes were identified among the group of 51 bills selected, outlined in Appendix III-B**.** Many addressed multiple topics, and so appear in multiple categories. The most prevalent themes, in descending order of prominence, included: access to technology, hardware, and broadband connection, 20 bills in eight states (CA, MI, MN, MS, NC, NJ, PA, VA); redefining the instructional calendar, adjusting average daily attendance (ADA), 20 bills in 10 states (CA, DC, IA, IL, KY, MA, MI, MN, NC, NJ); adjusting requirements for teacher training, evaluation, and professional development, 10 bills in six states (IL, MI, NC, OH, WI, VT); and, emergent funding for establishing online/remote learning, eight bills in five states (LA, MA, MI, MN, NC). A number of states also advanced general mandates allowing virtual or remote instruction in the event of such an emergency (eight bills in five states; AZ, IL, KY, MN, NJ).

Finance and Governance

Funding was a commonly discussed theme in many of the 2020 bills as states imposed or permitted online efforts. Nine bills in six states, four of which were enacted, granted emergency internal funding (LA, MA, MI, MN, MS, NC). Two bills, one pending (NJ S 2507) and one failed (MN HF 59), discussed allowing school districts to use capital reserve funds to generally support instruction under a state of public health emergency. Appropriations were commonly suggested to be used for "expanding the state learning management platform"[88] and purchasing "digital content and curriculum."[89] Alternatively, Minnesota (MN HF 4660, MN SF 150) looked outward for supplemental funds by trying to establish partnerships with nonprofits to help support newly adopted blended learning. Funding bills generally recognized that the onset of COVID-19 would require school districts to engage in extra coordination and planning, and therefore established special supportive funds.

Among the eight bills that simply provided permission and parameters for establishing remote instruction, some required approval from the school board or superintendent before implementation of certain "e-learning" programs; others mandated that virtual instruction immediately replace in-person learning for the duration of any public health emergency. Notably, New Jersey (NJ A 3904) detailed a suggested protocol to guide districts new to online instruction. This enacted bill required the state commissioner to keep all stakeholders informed of instructional decisions, provided more information on how to deliver virtual instruction to students without technology, and offered guidance on the length of a virtual day, school-funded food programs, and assessment schedules. Such explicit guidance for school districts to implement the operations of remote learning rarely appeared in this body of legislation. Rather, bills more commonly broadly mandated that schools immediately adopt virtual schooling both in the late 2019-2020 school year and some also for the 2020-21 school year. One Minnesota bill (MN HF 59) included a definition of distance learning or virtual instruction to guide local decisions, whereas most called on local governance to approve remote instructional plans as they thought best.

Instructional Quality

In light of the sudden conversion of traditional schools to virtual learning, many states considered whether standards of instructional time, assessments, and academic benchmarks would be maintained. Conditions were, and continue to be, extraordinary: School personnel nationwide suddenly lost all access to in-person instruction as they endured the personal and professional stresses of a global pandemic; interim innovators had to factor into their plans not only those stresses, but also many other barriers that different kinds of families face. Understandably, many states saw legislative proposals calling for suspension of regular expectations for performance, attendance, and time in the classroom. Seven bills were proposed, six enacted (AZ, KY, NC, NJ, OH, WI), extending or suspending student assessments and other accountability measures for academic promotion (failed, CA). One extensive bill enacted in Ohio (OH HB 197) addressed accountability, assessments, promotion/retention, and charter school ratings. Like other bills in this category (NC SB 704, WI AB 1038/ACT 185), the Ohio bill prohibited publishing state school district report cards, protecting districts from penalties and sanctions they might otherwise have suffered for academic decline resulting from pandemic disruption. Arizona (AZ HB 2910) passed a bill releasing schools from adhering to special education requirements for grade promotion, while a similar bill failed in California (CA AB 117). In addition, promotion requirements for elementary school students contingent upon reading assessments were waived for Arizona, North Carolina, Ohio, and Wisconsin (AZ HB 2910, NC SB 704, OH HB 197, WI AB 1038/ACT 185).

Many bills acknowledged the need for compromise in calculating attendance-related statistics and instructional days. Of 20 total bills in 10 states adjusting such requirements, 60% targeted those two areas (CA, DC, IA, IL, KY, MA, MI, MN, NC, NJ). Kentucky (KY SB 177) and Michigan (MI HB 5912) passed bills modifying attendance calculations to prevent loss of funding that might otherwise result from the pandemic. Some legislation proactively waived the requisite number of instructional days if the governor announced a public health emergency, or if districts were expected to, and capable of, providing remote instruction instead (MI HB 5912, IA SF 2310, NC SB 704, NJ A 3904, KY SB 177). A few states went so far as to require a “nontraditional” or “remote instructional plan” to include virtual learning in preparing for the 2020-2021 school year if districts wanted to count remote instructional days toward full attendance (enacted: NC SB 704, KY SB 177, NJ A 3904). Some provisions protected family choice: Iowa (IA SF 2310) allowed students with a family member at high risk for COVID-19 to enroll in an alternative fully online public school.

High-needs student subgroups experienced disproportionate stressors. Legislation proposed to offset inequities included subsidies for supporting the homeless, students with special needs, and English language learners (CA, IL, MA, MN, NC). North Carolina (NC HB 1105) enacted legislation allocating funds to a nonprofit organization to provide homeless students with benefits including tutors, food services, instructional space, personal technology, and counseling during the pandemic. Similarly, Massachusetts and Illinois passed legislation establishing direct grants to school districts to support homeless students, students with disabilities, English language learners, and students with low socioeconomic backgrounds (MA S 2790, IL SB 1569). Equitable access to technology and other emergency funds for low-income communities of color and otherwise disadvantaged students were also proposed by California (CA AB 2626) and Minnesota (MN HF 4660). Because low-income

students typically lacked the suddenly essential technology, 19 bills across 8 states were drafted to close the "digital divide" (CA, MI, MN, MS, NC, NJ, PA, VA). Only 16% of such technology-related bills were enacted in 2020, while 68% failed. North Carolina (NC HB 1043), however, championed a generous bill enacted for online learning, allocating $11 million to improve broadband connectivity and $30 million to fund hardware for students. Of other bills addressing technology, six proposed grant funding limited to improved Wi-Fi connectivity (MN, NC), two proposed funding limited to securing devices for students in need (NJ), two proposed funding limited to securing appropriate software (CA, PA), seven bills included the suite of directives for wireless access, devices, and learning platforms (CA, MI, MN, NC, NJ, VA), and finally, two bills allocated funds for general distance learning technology (MS).

Teacher Quality

Other anticipated evaluations and certifications related to teacher preparation and performance were also adjusted for the 2020-2021 school years in some states to allow flexibility and support while educators were managing unconventional instruction. Wisconsin (WI AB 1038 / ACT 185) and Ohio (OH HB 197) enacted legislation prohibiting the use of student assessment scores in teacher evaluations. Illinois (IL HB 1569) and Ohio (OH HB 197) passed bills giving permission to either score teacher evaluations as "excellent" or to waive them altogether. Given that other ongoing teacher training and certification would be difficult to complete outside classrooms, provisional teachers' licenses allowed temporary certification to teach remotely (VT H 969 / ACT 154, OH HB 197) and as was the case for Illinois (IL SB 1569), teachers were allowed to finish student teaching virtually during the spring of 2020. Ohio (OH HB 197) enacted legislation that permitted their department of education to issue one-year, nonrenewable, provisional licenses to educators that have met all other requirements for the requested license except for the requirement to pass a subject area exam. Since such training methods were unique, some virtual professional development (PD) legislation was proposed to assist in the sudden pedagogical shift. An enacted North Carolina bill (NC SB 704) provides for teachers and staff training on effective use of the remote instruction resource, and an unsuccessful bill in that state (NC HB 1116) proposed to leverage the state virtual school to provide North Carolina teachers with a suite of professional development options that use a variety of formats to meet the learning needs of teachers in the state. Michigan (MI SB 994), however, was the only state to introduce "an amount equal to $500 per full-time equated classroom teacher . . . to recognize the additional overtime and hazardous conditions have incurred or experienced to provide distance learning during the period of school closure as a result of the COVID-19 pandemic."[90]

Unique Needs

Outside of the direct needs of students and teachers to support teaching and learning, some legislation addressed other more general needs of families and staff during an exceedingly difficult time. Four states (NJ, MI, NC, VT) proposed six bills, with three being enacted) providing ancillary funding and services to ensure all stakeholders were adequately sup-

ported and able to manage and support student learning, without which the switch to virtual schooling would be difficult, and perhaps impossible, for many. North Carolina (NC HB 1105) passed a bill authorizing community-based organizations to provide childcare and other economic and remote learning support while under emergency circumstances. School nutritional services and appropriations for other food-related costs are pending in Michigan (MI SB 994), but passed in North Carolina (NC HB 1043) and Vermont (VT H969/A 154). Michigan (MI SB 994) introduced legislation for social-emotional intervention and New Jersey (NJ A 3975) introduced a bill offering educational training and counseling services for children at risk of abuse or neglect in the home. For many families, the critical need to ensure students' social-emotional well-being took priority over academic assignments and performance.

In General

Overall, a substantial number of pandemic-relevant themes and support mechanisms emerged in 19 legislating states in 2020. However, given the pervasive and extensive disruption experienced, it's noteworthy that in 31 states, no state-wide legislation was proposed. The critical need for responses to a panoply of challenges, however, is evident in the brevity of most bills cited. And some proposals were simple amendments to formerly enacted virtual education bills, with select language edited to include phrases addressing emergency situations. Such brief bills or modest alterations suggest that legislators did not necessarily think deeply about how to address remote learning needs, nor did they try to change the existing structure of virtual schooling. Instead, they designed emergency bills aimed at putting a band aid on the hemorrhaging issues. Those familiar with adopting new pedagogies and working productively in substandard environments know that ongoing training and detailed planning are not just helpful, but essential to effective practice. Thus, the few states that did craft comprehensive plans for remote learning were outliers, and even those left many questions concerning next steps and implementation. In addition, given the uncertainty of the year and rapidly changing circumstances, some state legislatures might have been hesitant to revamp funding and services when no one could predict how long virtual instruction models might last for brick-and-mortar schools.[91]

Recommendations

Based on this review and analysis, it is recommended that policymakers:

- 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 support them, and provide adequate funding.
- Establish geographic boundaries and manageable enrollment zones for virtual schools by implementing state-centered funding and accountability systems.
- Develop guidelines and governance mechanisms to ensure that virtual schools do not

prioritize profit over student performance.

- Require high-quality curricula, aligned with applicable state and district standards, and monitor changes to digital content.
- Develop a comprehensive system of 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 checkpoints to assess the quality of the learning experience from the student perspective.
- Delineate the definitions of adequate quantity of instruction to ensure subject mastery.
- 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.
- 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 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 they are prepared with the knowledge and skills to be effective, particularly with respect to evaluating teachers and promoting best practices.

Notes and References Section III

1 The keyword *blended learning* was added to the 2015 and 2016 legislative bill analysis, and was not used in previous searches of the StateNet® Bill Tracking Database. The authors thank Ben Erwin (Policy Researcher, Education Commission of the States) and the Education Commission of the States for their assistance in developing the database of virtual school related bills for the 2019 and 2020 legislative sessions.

2 In 2018, 42 bills were considered in 23 states; 17 were enacted, 19 failed and six were pending. In 2017, 85 bills were considered in 34 states; 28 were enacted, 54 failed and four were pending In 2016, 113 bills were considered in 37 states; 33 were enacted, 60 failed and 20 were 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, and 31 were pending. In 2013, 127 bills were considered in 25 states; 29 were enacted, seven failed and 92 were pending. In 2012, 128 bills were considered in 31 states; 41 were enacted and 87 failed.

3 In 2017 and 2018 legislative sessions a total of 16 bills related to cyber security and student data privacy were proposed (eight bills were enacted, seven bills failed and one was pending). In the 2019 and 2020 legislative sessions we identified only one bill related to cyber security and student data privacy: OH HB 684.

4 As in previous reports we again highlight the work of Baker and Bathon (2013) 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. Specifically, 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. See Baker, B.D. & Bathon, J. (2012). *Financing online education and virtual schooling: A guide for policymakers and advocates*. Boulder, CO: National Education Policy Center. Retrieved November 12, 2013, from http://nepc.colorado.edu/publication/financing-online-education

5 National Alliance for Public Charter Schools, 50-State Campaign for Achievement Now, & National Association of Charter School Authorizers. (2016, June). *A call to action to improve the quality of full-time virtual charter public schools*. Washington, DC: Authors. Retrieved December 2, 2018, from https://www.publiccharters.org/sites/default/files/migrated/wp-content/uploads/2016/06/Virtuals-FINAL-06202016-1.pdf

6 Molnar, A., Miron, G.C., Shank, C., Davidson, C., Barbour, M.K., Huerta, L., Shafter, S.R., & Rice, J.K. (2019), *Virtual schools report 2019*. Boulder, CO: National Education Policy Center. Retrieved June 1, 2019, from http://nepc.colorado.edu/publication/virtual-schools-annual-2019

7 Hanna, Maddie (2020, February 4). Wolf pushing charter-school bill that would change funding, accountability rules. *The Philadelphia Inquirer*. Retrieved on January 22, 2021, from https://www.inquirer.com/news/charter-school-reform-pennsylvania-tom-wolf-budget-20200203.html

8 DePasquale, E.A. (2016, August). *Performance audit report, Pennsylvania Department of Education charter school payment appeals*. Harrisburg, PA: Bureau of School Audits, Pennsylvania. Retrieved December 1, 2016, from https://www.paauditor.gov/Media/Default/Reports/Performance%20Audit%20of%20the%20PA%20Department%20of%20Education.pdf

DePasquale, E.A. (2016, September). *Performance audit report, Pennsylvania cyber charter school. Department of Education charter school payment appeals*. Harrisburg, PA: Bureau of School Audits, Pennsylvania. Retrieved December 1, 2016, from https://www.paauditor.gov/Media/Default/Reports/PACyberCharterSchool,%20Beaver,%20092116.pdf

9 Trombola, Nick (2020, July 22). Auditor General calls for change to state's charter school law after review of PA Cyber, Lincoln Park. *Pittsburgh Post-Gazette*. Retrieved on January 20, 2021, from https://www.post-gazette.com/news/education/2020/07/22/Lincoln-Learning-Solutions-Pennsylvania-Cyber-Charter-school-Lincoln-Park-Performing-Arts-audit-law-DePasquale/stories/202007220118

10 DePasquale, E.A. (2020, July 22). *Lincoln Learning Solutions' $81.8 million reserve points to further need for charter school law reforms*. Harrisburg, PA: Bureau of School Audits, Pennsylvania. Retrieved December 30, 2020, from https://www.paauditor.gov/press-releases/auditor-general-depasquale-lincoln-learning-solutions-81-8-million-reserve-points-to-further-need-for-charter-school-law-reforms

11 Pennsylvania (PA HB 1449), 2019.

12 Arizona (AZ HB 2891), 2020.

13 New Mexico (NM SB 429), 2019.

14 Indiana (IN SB 183), 2019.

15 Nevada (NV SB 441), 2019.

16 Molnar, A., Miron, G.C., Shank, C., Davidson, C., Barbour, M.K., Huerta, L., Shafter, S.R., & Rice, J.K. (2019), *Virtual schools report 2019*. Boulder, CO: National Education Policy Center. Retrieved June 1, 2019, from http://nepc.colorado.edu/publication/virtual-schools-annual-2019

17 Oklahoma (OK SB 1538), 2020.

18 Oklahoma (OK SB 1097), 2020.

19 *K12Inc. annual report 2019*. Retrieved February April 1, 2021, from https://www.annualreports.com/HostedData/AnnualReports/PDF/NYSE_LRN_2019.pdf

20 Business Wire (2020, August 11). *K12 Inc. reports full year fiscal 2020 with revenues of $1.04 billion*. Retrieved on March 30, 2021, from https://www.businesswire.com/news/home/20200811005705/en/K12-Inc.-Reports-Full-Year-Fiscal-2020-with-Revenues-of-1.04-Billion

21 K12 Inc. (2019, August 7). *K12 Inc. reports full year fiscal 2018 revenue increases 3.3% to $917.7 million*. Retrieved April 7, 2019, from http://investors.k12.com/phoenix.zhtml?c=214389&p=irol-newsArticle&ID=2362641

22 Molnar, A., Miron, G.C., Shank, C., Davidson, C., Barbour, M.K., Huerta, L., Shafter, S.R., & Rice, J.K. (2019), *Virtual schools report 2019*. Boulder, CO: National Education Policy Center. Retrieved June 1, 2019, from http://nepc.colorado.edu/publication/virtual-schools-annual-2019

23 Reed Ward, P. (2018, July 24). Cyber charter founder Trombetta is sentenced to 20 months in prison, *Pittsburgh Post-Gazette*. Retrieved November 15, 2018, from https://www.post-gazette.com/news/crime-courts/2018/07/24/Cyber-Charter-founder-Trombetta-sentenced-20-months-prison-8-million-midland-beaver-county/stories/201807240110

24 In 2017, California enacted CA S406, a bill that restricts for-profit companies who petition for a charter after July 1, 2019, from operating or managing any new charter school.

25 In 2018, a bill was enacted in Ohio (OH S216) that 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.

26 Nevada (NV SB 411), 2019.

27 Missouri (MO SB 996), 2020.

28 Oklahoma (OK HB 2905), 2020.

29 Molnar, A., Miron, G.C., Shank, C., Davidson, C., Barbour, M.K., Huerta, L., Shafter, S.R., & Rice, J.K. (2019), *Virtual schools report 2019*. Boulder, CO: National Education Policy Center. Retrieved June 1, 2019, from http://nepc.colorado.edu/publication/virtual-schools-annual-2019

30 Pennsylvania (PA HB 2833), 2020.

31 Pennsylvania (PA HB 355), 2020.

32 Teacher quality is obviously also a key element of program quality; we consider that critical element in the next section of our report.

33 Staker, H. (2013, October 29). *Should Pennsylvania invest in sustaining or disruptive classrooms?* Clayton Christensen Institute. Retrieved October, 2, 2016, from http://www.christenseninstitute.org/should-pennsylvania-invest-in-sustaining-or-disruptive-classrooms/

34 Staker, H. (2013, October 29). *Should Pennsylvania invest in sustaining or disruptive classrooms?* Clayton Christensen Institute. Retrieved October 2, 2016, from http://www.christenseninstitute.org/should-pennsylvania-invest-in-sustaining-or-disruptive-classrooms/

35 Gill, B., Walsh, L., Wulsin, C.S., Matulewicz, H., Severn, V., Grau, E., Lee, A., & Kerwin, T. (2015). *Inside online charter schools*. Cambridge, MA: Mathematica Policy Research.

36 Dans, E. (2020, April 13). *The Coronavirus pandemic has unleashed a revolution in education: From now on, blended learning will be the benchmark* (p. 1). Retrieved January 12, 2021, from https://www.forbes.com/sites/enriquedans/2020/04/13/the-coronavirus-pandemic-has-unleashed-a-revolution-in-education-from-now-on-blended-learning-will-be-the-benchmark/?sh=2e586fb3536f

37 Herold, B. (2016, November 3). *A virtual mess: Inside Colorado's largest charter school*. Retrieved November 19, 2016, from http://www.edweek.org/ew/articles/2016/11/03/a-virtual-mess-colorados-largest-cyber-charter.html

38 Shepherd, C.E., Bolliger, D.U., Dousay, T.A., et al. (2016). Preparing teachers for online instruction with a graduate certificate program. *Tech Trends, 60*(1), 41. Retrieved November 19, 2016, from https://doi.org/10.1007/s11528-015-0015-2

39 Boninger, F., Molnar, A., & Saldaña, C.M. (2019). *Personalized learning and the digital privatization of curriculum and teaching (*p. 20). Boulder, CO: National Education Policy Center. Retrieved April 12, 2021, from http://nepc.colorado.edu/publication/personalized-learning

40 Center on Reinventing Public Education. (2015). *The policy framework for online charter schools* (p. 9). Retrieved January 6, 2016, from http://www.crpe.org/sites/default/files/crpe-policy-framework-online-charter-schools-final_0.pdf

41 Center on Reinventing Public Education. (2015). *The policy framework for online charter schools* (p. 9). Retrieved January 6, 2016, from http://www.crpe.org/sites/default/files/crpe-policy-framework-online-charter-schools-final_0.pdf

42 Since the late 19th century, the Carnegie Unit has served as a standard measure of educational attainment. University officials determined that secondary students attained sufficient content knowledge after 120 hours of class or contact time with an instructor over the course of a year. Therefore, one semester equals one-half of a Carnegie Unit.

43 For example: Miller, L., & Joseph, M. (2020, November 30). *It's time for a new grand bargain that ends school funding based on seat time*. Retrieved January 4, 2021, from https://www.crpe.org/thelens/its-time-new-grand-bargain-ends-school-funding-based-seat-time

44 Smith, N. & Westapher, E. (2017). *Virtual charter school accountability: What we can do now*. Retrieved January 11, 2019, from https://www.qualitycharters.org/wp-content/uploads/2018/03/NCSRC-Virtual-Accountability-Paper-FINAL.pdf

45 Smith, N. & Westapher, E. (2017). *Virtual charter school accountability: What we can do now*. Retrieved January 11, 2019, from https://www.qualitycharters.org/wp-content/uploads/2018/03/NCSRC-Virtual-Accountability-Paper-FINAL.pdf

46 Miller, L., & Joseph, M. (2020, November 30). *It's time for a new grand bargain that ends school funding based on seat time*. Retrieved January 4, 2021, from https://www.crpe.org/thelens/its-time-new-grand-bargain-ends-school-funding-based-seat-time

47 Deye, S. (2020, January). *NCSL student-centered learning commission: The future is now*. Retrieved January 4, 2021, from https://www.ncsl.org/research/education/the-future-is-now.aspx

48 Miller, L., & Joseph, M. (2020, November 30). *It's time for a new grand bargain that ends school funding based on seat time*. Retrieved January 4, 2021, from https://www.crpe.org/thelens/its-time-new-grand-bargain-ends-school-funding-based-seat-time

49 National Conference of State Legislatures. (2018). *Competency-based education*. Retrieved January 9, 2019, from http://www.ncsl.org/research/education/competency.aspx

50 Patrick, S., Truong, N., & Chambers, A., (2020). *Future focused state policy actions to transform K-12 education*. Retrieved January 12, 2021, from https://aurora-institute.org/resource/future-focused-state-policy-actions-to-transform-k-12-education/

51 Illinois State Board of Education. *Competency pilot*. (2021). Retrieved January 12, 2021, from https://www.isbe.net/Pages/CompetencyPilot.aspx

52 Evans, C.M. Landl, E., & Thompson, J. (2020, October 20). Making sense of K-12 competency-based education: A systematic literature review of implementation and outcomes research from 2000 to 2019. *Journal of Competency-Based Education*. Retrieved April 15, 2021, from https://onlinelibrary.wiley.com/doi/epdf/10.1002/cbe2.1228

53 For example, K12, Inc. states in *Best Virtual School Solution for Students*: "As evidence of the benefit of our holistic approach, our fully managed K12 partner schools generally test above state averages on standardized achievement tests." Retrieved April 30, 2013, from http://www.k12.com/sites/default/files/pdf/K12-Inc-Best-Virtual-School-Solution-2010.pdf/

54 CREDO. (2015). *Press release: Online charter school students falling behind their peers*. Retrieved October, 11, 2016, from https://credo.stanford.edu/sites/g/files/sbiybj6481/f/online_press_release.pdf

55 Benner, M. & Campbell, N. (2018). *Profit before kids*. Washington, D.C.: Center for American Progress. Retrieved January 11, 2019, from https://www.americanprogress.org/issues/education-k-12/reports/2018/10/10/459041/profit-before-kids/

56 Benner, M. & Campbell, N. (2018). *Profit before kids*. Washington, D.C.: Center for American Progress. Retrieved January 11, 2019, from https://www.americanprogress.org/issues/education-k-12/reports/2018/10/10/459041/profit-before-kids/

57 Prothero, A. & Harwin, A. (2019, April 18). Many online charter schools fail to graduate even half of their students on time. *Education Week*. Retrieved January 4, 2021, from https://www.edweek.org/teaching-learning/many-online-charter-schools-fail-to-graduate-even-half-of-their-students-on-time/2019/04

58 Gemin, B., Pape, L., Vashaw, L. & Watson, J. (2015). *Keeping pace with K-12 online & blended learning: An annual review of policy and practice* (p. 104). Retrieved January 5, 2016, from http://www.kpk12.com/wp-content/uploads/Evergreen_KeepingPace_2015.pdf

59 Gemin, B., Pape, L., Vashaw, L. & Watson, J. (2015). *Keeping pace with K-12 online & blended learning: An annual review of policy and practice* (p. 105). Retrieved January 5, 2016, from http://www.kpk12.com/wp-content/uploads/Evergreen_KeepingPace_2015.pdf

60 Council for Accreditation of Educator Preparation. (2013). *CAEP standards*. Retrieved January 24, 2021, from http://caepnet.org/~/media/Files/caep/standards/caep-standards-one-pager-0219.pdf?la=en

International Society for Technology Education. (2021). *ISTE standards*. Retrieved January 24, 2021, from https://www.iste.org/standards?utm_term=iste%20standards&utm_campaign=Brand+Searches&utm_medium=ppc&utm_source=adwords&hsa_grp=61360599075&hsa_mt=e&hsa_tgt=kwd-302881635276&hsa_acc=3340209094&hsa_cam=1573266230&hsa_kw=iste%20standards&hsa_ad=385704058210&

61 Gemin, B., Pape, L., Vashaw, L. & Watson, J. (2015). *Keeping pace with K-12 online & blended learning: An annual review of policy and practice*. Retrieved January 24, 2021, from http://www.kpk12.com/wp-content/uploads/Evergreen_KeepingPace_2015.pdf

National Education Association. *Guide to teaching online courses*. Retrieved January 24, 2021, from https://www.cstu.org/files/onlineteachguide.pdf

Center on Reinventing Public Education. (2015). *The policy framework for online charter schools*. Retrieved January 24, 2021, from http://www.crpe.org/sites/default/files/crpe-policy-framework-online-charter-schools-final_0.pdf

Center for Research on Education Outcomes (CREDO). (2015). *Online charter school study*. Retrieved January 23, 2021, from https://credo.stanford.edu/sites/g/files/sbiybj6481/f/online_charter_study_final.pdf

62 National Education Association. *Guide to teaching online courses*. Retrieved January 22, 2021, from https://www.cstu.org/files/onlineteachguide.pdf

Gemin, B. & Pape, L. (2017). *Keeping pace with K-12 online & blended learning: An annual review of policy and practice* (p. 59). Retrieved January 24, 2021, from https://files.eric.ed.gov/fulltext/ED576762.pdf

63 Digital Learning Collaborative. (2019). *Snapshot 2019: A review of K-12 online, blended, and digital learning*. Retrieved on January 23, 2021, from https://static1.squarespace.com/static/59381b9a17bffc68bf625df4/t/5cae3c05652dea4d690f5315/1554922508490/DLC-KP-Snapshot2019_040819.pdf

64 Digital Learning Collaborative. (2019). *Snapshot 2019: A review of K-12 online, blended, and digital learning*. Retrieved on January 23, 2021, from https://static1.squarespace.com/static/59381b9a17bffc68bf625df4/t/5cae3c05652dea4d690f5315/1554922508490/DLC-KP-Snapshot2019_040819.pdf

65 Digital Learning Collaborative. (2019). *Snapshot 2019: A review of K-12 online, blended, and digital learning*. Retrieved on January 23, 2021, from https://static1.squarespace.com/static/59381b9a17bffc68bf625df4/t/5cae3c05652dea4d690f5315/1554922508490/DLC-KP-Snapshot2019_040819.pdf

66 Gemin, B. & Pape, L. (2017). *Keeping pace with K-12 online & blended learning: An annual review of policy and practice*. Retrieved January 24, 2021, from https://files.eric.ed.gov/fulltext/ED576762.pdf

67 Archambault, L. & Larson, J. (2015). Pioneering the digital age of instruction: Learning from and about K-12 online teachers. *Journal of Online Learning, 1*(1), 49-83.

68 Gill, B., Walsh, L., Wulsin, C.S., Matulewicz, H., Severn, V., Grau, E., Lee, A., & Kerwin, T. (2015). *Inside online charter schools*. Cambridge, MA: Mathematica Policy Research.

69 Center on Reinventing Public Education. (2015). *The policy framework for online charter schools* (p. 8). Retrieved January 23, 2021, from http://www.crpe.org/sites/default/files/crpe-policy-framework-online-charter-schools-final_0.pdf

70 Center on Reinventing Public Education. (2015). *The policy framework for online charter schools* (p. 9).

Retrieved January 23, 2021, from http://www.crpe.org/sites/default/files/crpe-policy-framework-online-charter-schools-final_0.pdf

71 Emily Pulham & Charles R. Graham. (2018). Comparing K-12 online and blended teaching competencies: A literature review, *Distance Education*, *39*(3), 411 432. Retrieved April 26, 2021, from https://doi.org/10.1080/01587919.2018.1476840

72 Moore-Adams. B.L., Jones, W.M., Cohen, J. (2016). Learning to teach online: a systematic review of the literature on K-12 teacher preparation for teaching online. *Distance Education*, *37*(3), 333-348. Retrieved April 26, 2021, from https://doi.org/10.1080/01587919.2016.1232158

73 A 2016 study found that between 2010 and 2016, the percentage of teacher education programs offering an online experience grew from 1.3 to 3.5. See Archambault, L., Kennedy, K., Shelton, C., Dalal, M., McAllister, L. & Huyett, S. (2016). Incremental progress: Re-examining field experiences in K-12 online learning contexts in the United States. *Journal of Online Learning Research*, *2*(3), 303-326. Retrieved January 24, 2021, from https://www.learntechlib.org/primary/p/174116/

74 Gill, B., Walsh, L., Wulsin, C.S., Matulewicz, H., Severn, V., Grau, E., Lee, A., & Kerwin, T. (2015). *Inside online charter schools*. Cambridge, MA: Mathematica Policy Research.

75 Zweig, J., Stafford, E., Clements, M., and Pazzaglia, A.M. (2015). *Professional experiences of online teachers in Wisconsin: Results from a survey about training and challenges* (REL 2016– 110). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest. Retrieved January 24, 2021, from https://ies.ed.gov/ncee/edlabs/projects/project.asp?projectID=1463

76 Nickels, M. & Nordine, D. (2017, November 16). What do online teachers need to succeed? *Education Week*. Retrieved January 24, 2021, from http://blogs.edweek.org/edweek/urban_education_reform/2017/11/what_do_online_teachers_need_to_succeed.html

77 Gill, B., Walsh, L., Wulsin, C.S., Matulewicz, H., Severn, V., Grau, E., Lee, A., & Kerwin, T. (2015). *Inside online charter schools*. Cambridge, MA: Mathematica Policy Research.

78 Gill, B., Walsh, L., Wulsin, C.S., Matulewicz, H., Severn, V., Grau, E., Lee, A., & Kerwin, T. (2015). *Inside online charter schools* (p. 12). Cambridge, MA: Mathematica Policy Research.

79 Center for Research on Education Outcomes (CREDO). (2015). *Online charter school study*. Retrieved January 23, 2021, from https://credo.stanford.edu/sites/g/files/sbiybj6481/f/online_charter_study_final.pdf

Gill, B., Walsh, L., Wulsin, C.S., Matulewicz, H., Severn, V., Grau, E., Lee, A., & Kerwin, T. (2015). *Inside online charter schools*. Cambridge, MA: Mathematica Policy Research.

80 Examples of standards-based evaluation include Charlotte Danielson's Framework for Teaching and the Gates Foundation's CLASS instrument for classroom observation.

81 Gill, B., Walsh, L., Wulsin, C.S., Matulewicz, H., Severn, V., Grau, E., Lee, A., & Kerwin, T. (2015). *Inside online charter schools*. Cambridge, MA: Mathematica Policy Research.

82 Larkin, I.M., Brantley-Dias, L., & Lokey-Vega, A. (2016). Job satisfaction, organizational commitment, and turnover intention of online teachers in the K-12 setting. *Online Learning*, *20*(3), 25-51.

83 Borup, J. & Stevens, M.A. (2016). Factors influencing teacher satisfaction at an online charter school. *Journal of Online Learning Research*, *2*(1), 3-22.

84 Zweig, J., Stafford, E., Clements, M., & Pazzaglia, A.M. (2015). *Professional experiences of online teachers in Wisconsin: Results from a survey about training and challenges* (REL 2016– 110). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest. Retrieved January 24, 2021, from https://ies.

ed.gov/ncee/edlabs/projects/project.asp?projectID=1463

85 Calefati, J. (December 15, 2016). California Virtual Academies: Is online charter school network cashing in on failure? *The Mercury News*. Retrieved January 24, 2021, from http://www.mercurynews.com/2016/04/16/california-virtual-academies-is-online-charter-school-network-cashing-in-on-failure/

86 Gill, B., Walsh, L., Wulsin, C.S., Matulewicz, H., Severn, V., Grau, E., Lee, A., & Kerwin, T. (2015). *Inside online charter schools*. Cambridge, MA: Mathematica Policy Research.

87 Digital Learning Collaborative. (2019). *Snapshot 2019: A review of K-12 online, blended, and digital learning*. Retrieved on January 23, 2021, from https://static1.squarespace.com/static/59381b9a17bffc68bf625df4/t/5cae3c05652dea4d690f5315/1554922508490/DLC-KP-Snapshot2019_040819.pdf

88 North Carolina (NC HB 1043), 2020.

89 Louisiana (LA HB 853), 2020.; North Carolina (NC SB 704), 2020; North Carolina (NC HB 1038), 2020.

90 Michigan (MI SB 994), 2020.

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