Virtual Schools in the U.S. 2015:
Politics, Performance, Policy, and Research Evidence

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

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Executive Summary

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

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

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

Recommendations arising from Section II include that:

- Policymakers regulate the growth and geographic reach of full-time, taxpayer-funded virtual schools. At present there are serious questions about the effectiveness of many models of virtual schooling. Until these questions can be adequately addressed, policymakers should focus their efforts on promoting virtual school models that have shown to be successful, while limiting those models that have resulted in questionable student performance.

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

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Introduction

Virtual schooling has been around for approximately twenty-five years, but related research literature has not kept pace with its growth. In the first major literature review of K-12 distance education, Kerry Rice wrote that "a paucity of research exists when examining high school students enrolled in virtual schools, and the research base is smaller still when the population of students is further narrowed to the elementary grades."[1] Three years later, Barbour and Reeves wrote that "there has been a deficit of rigorous reviews of the literature related to virtual schools."[2] Six years ago, Cavanaugh, Barbour, and Clark described the current state of virtual schooling research as:

> indicative of the foundational descriptive work that often precedes experimentation in any scientific field. In other words, it is important to know how students in virtual school engage in their learning in this environment prior to conducting any rigorous examination of virtual schooling.[3]

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

While there has been some improvement in what is known about supplemental K-12 online learning, there continues to be a lack of reliable and valid evidence to guide full-time online practice and policy. For example, in their review of the literature related to such programs, Hasler, Waters, Barbour and Menchaca wrote that "a handful of reports outlined concerns with the way these online charter schools were being managed and the lack of accountability required of these fledging schools. There was relatively little evidence that proved that these schools could achieve academic ratings similar to their traditional counterparts."[4]

While the amount of published research continues to increase, and the variety of research questions continues to broaden, much of the research into virtual schooling continues to be descriptive or exploratory.[5] While such research has potential to impact the practice of virtual schooling, often it applies only in limited contexts. There continues to be too little reliable a research available to guide practitioners and policymakers. In the following sections, we discuss available information and notable gaps in the areas of: finance and governance, instructional program quality, teacher quality, and for-profit educational management organizations (EMOs).

Finance and Governance

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

As noted in Section I, one of the difficulties related to the issue of financing virtual schooling is the fact that it is a challenge to identify the actual or exact costs of virtual schools.[6] To

Table 2.1. Literature Focused on Funding Virtual Schools

Reach	Date	Literature
CO	2004	"…cost per student [of cyber schooling] is not enormously higher than for in-class students. Over time, cyber education will become substantially more cost-efficient."[7]
OH	2005	…actual cost of the five existing full-time online charter schools was $5382/student, compared to $8437/student for traditional public brick-and-mortar schools.[8]
National	2006	"…the operating costs of online programs are about the same as the operating costs of a regular brick-and-mortar program." "…[analysis] excluded schools' capital expenses and transportation costs from their brick-and-mortar estimates; had those costs been included "the costs of operating virtual schools would have been less per pupil than brick-and-mortar schools."[9]
FL	2007	…Florida Virtual School to be $284 more cost effective than brick-and-mortar education in 2003-04, and $1048 more cost effective by 2006-07.[10]
GA	2010	…able to meet Annual Yearly Progress in 2009-10 with 65% of the funding provided to traditional schools, or $3500/student.[11]
WI	2010	…able to operate its full-time online charter schools at 65% of traditional funding, or $6,480/student.[12]
MI	2012	…it cost 16% less in 2009-10 and was projected to cost 7% less in 2010-11 to provide full-time online learning than to provide traditional schooling.[13]
National	2012	…full-time K-12 online learning costs between $5,100/student and $7,700/student—or between 51% and 77% of the cost of traditional brick-and-mortar schooling.[14]

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

some literature does exist is the issue of the financing of virtual schooling. Last year's report discussed this body of literature, which is summarized in Table 2.1.[15]

As Table 2.1 illustrates, the majority of literature has found that virtual schools can provide students with an education at a lower cost than brick-and-mortar schools. The question of whether they can provide equal *quality* for less cost is discussed in the following section—and if they cannot, then one could argue for equal funding. Lesser funding does appear to be typical practice in the United States. For example, the International Association for K-12 Online Learning (iNACOL) reported that many states funded virtual schools at 30-50% less than brick-and-mortar schools, specifically finding that the national average per pupil funding for virtual schooling was approximately $6,400, while per pupil funding for brick-and-mortar schools averaged $11,282.[16] However, iNACOL—which is a professional association focused on ensuring that all K-12 students have access to blended and online learning[17]—has argued that "online schools should be funded within the range of brick-and-mortar school operating costs in each state."[18]

Unfortunately, beyond the issue of the funding provided to virtual schools, the research into the financing and governance of virtual schools is limited. There is a growing body of literature available, but the vast majority of this literature has been produced by organizations like iNACOL,[19] Evergreen Education Group,[20] and the Foundation for Excellence in Education.[21] However, as Molnar indicated in the last report in this NEPC series, Evergreen assumes "the value of virtual education and the desirability of its expansion," while the Foundation for Excellence in Education is described as "clearly part of an advocacy campaign sponsored by the digital education industry and its supporters."[22]

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

> First, the state must address how the creation of cyber charter schools will differ from that of brick-and-mortar charter schools. Second, a state must address how and when a cyber charter school would be exempt from the educational provisions that apply to brick-and-mortar charter schools and traditional public schools. Finally, the state should address the evaluation process for cyber charter schools.[23]

Similarly, in a policy brief by the Center for Evaluation and Education Policy published in 2006, the authors outlined three policy areas that the State of Indiana would need to consider as the legislature in that state was debating virtual charter schools (funding cross-district enrollment and enrollment of formerly homeschooled students, accountability for student performance and program quality, federal and state compliance for serving special education students).[24] Yet 11 years later, and as indicated in Section I, many states still do not have legislative or regulatory regimes to address these issues.

In 2010, Brady, Umpstead, and Eckes reviewed the legislative landscape of virtual charter schools and found that at least 21 states had legislative language related to virtual charter schools or virtual instruction within charter schools, and another four states had virtual charter schools in operation (even though there were no provisions to allow for their creation in any legislation).[25] The authors also reported that one of the challenges facing legislative guidance for virtual charter schools was the fact that many laws had specific references to dated terminology, using examples such as distance education in New Hampshire or correspondence education in Alaska. According to the authors, this use of dated terms was indicative of ambiguous guidance for virtual charter schools operators because these regulations were generally written before the advent of virtual schooling. Based on their review, Brady, Umpstead, and Eckes recommended that states should pass legislation that outlined criteria for four areas:

1. States that operate cyber charter schools must provide a comprehensive definition of what constitutes online schools and programs;

2. State must detail adequate and sustainable funding systems for cyber charter schools;

3. States with cyber charter schools must include standards associated with monitoring the expectations; and

4. States must create accreditation requirements for cyber charter schools.[26]

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

However, it should be noted that even when research and data exist to help guide legislators and policymakers, for-profit EMOs often lobby to circumvent decisions based on that data. For example, Fang reported how a lobbyist for one of the two main virtual for-profit EMOs helped to draft the initial legislation that created virtual charter schools in Tennessee,[27] and two years later Sisk reported that in the face of student results that "fell far short of state expectations for the second year in a row" that lobbyist blocked efforts to limit the growth or shut down this failing program.[28] This is just one example of the influence of lobbyists on the legislative process within the field of virtual schooling. In her seminal *New York Times* article, Saul was one of the first in the media to question the role of for-profit EMO lobbying within the virtual schooling environment, using Pennsylvania as an example in this news item.[29]

In another example of legislators ignoring data to expand virtual charter schools, in 1999 Michigan banned virtual charter schools after a case of extreme corruption between one school district and a for-profit provider.[30] A decade later, the legislature passed *Public Act 205*, which lifted the ban on virtual charter schools and allowed two companies to each create one full-time program. Each of these virtual charter schools was limited to 400 students in the first year and an additional 1000 students in second year (but for each regular education student that registered, they were required to enroll one student from the State's drop out roll).[31] At the end of two years, the Department of Education would determine future enrollment limits based on the performance of the programs in those first two years. The student performance during those first two years on the state's

Michigan Education Assessment Program (MEAP) for both virtual charter schools is illustrated below.

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

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

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

As Table 2.2 highlights, in 2010 both MICA and MVCA performed at relatively average levels (i.e., MICA scored lower than the statewide average in 9 of 18 categories, and MVCA scored lower than the statewide average in 9 of 17 categories). However, in 2011 MICA performed lower than the statewide average in 9 of 15 categories and MVCA performed lower than the statewide average in 13 of 15 categories. Yet in the spring of 2012, with no

clear benefit and an apparent decline in performance, and only months before the review from the Department of Education would have occurred, the legislature moved to remove all meaningful restrictions on the number and enrollment levels of virtual schooling in the state. *Senate Bill 619* removed the cap on the number of virtual charter schools and limited enrollment for each virtual charter school to 2,500 students in the first year, 5,000 students in the second year and 10,000 students after the second year.[32] Essentially, in the face of data indicating uncertainty about whether existing virtual charter schools in Michigan were providing a quality instructional program sufficient to allow students to perform even at an average level, the legislators decided to expand these programs.

Five years ago Brady, Umpstead, and Eckes recommended that states needed "a more explicit approach in the laws governing the creation and operation of cyber charter schools."[33] Further, some three years ago, in the introduction to an issue of the *Peabody Journal of Education* focused on educational governance and policy, Manna wrote:

> Virtual schooling raises several policy and governance issues for states such as defining the virtual school population for purposes of allocating state funding; certifying virtual teachers…; maintaining academic honesty and integrity of virtual learning models so that the inevitable cheating or other scandals that occasionally emerge do not sink the entire enterprise; and, last, helping parents understand the comparative quality of virtual schools, just as current accountability systems try to assign marks to traditional brick-and-mortar institutions. There are incredibly challenging and important issues in state leaders' hands, and they become potentially even more complicated when virtual models are proposed as charter schools. In some states, charter school policy remains in a relatively immature form, even though that model of schooling has existed in some places since the early 1990s. Policies and oversight mechanisms that may seem appropriate for traditional public schools or charter schools may be infeasible in virtual settings yet relatively understaffed state education agencies nevertheless must address these emerging issues.[34]

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

To recap: while some proponent organizations argue for equal funding for virtual schools, the literature has consistently found virtual schooling is less expensive to provide than traditional brick-and-mortar schooling. Beyond this issue, research into the financing and governance of virtual schools is limited. However, even in instances where there has been data to guide policymakers, that data is often ignored due to lobbying by for-profit EMOs or ideological legislators.[35]

Instructional Program Quality

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

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

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

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

Sample	Finding
CO	"Online student scores in math, reading, and writing have been lower than scores for students statewide over the last three years."[36]
OH	…online charter school students experienced significantly lower achievement gains compared to brick-and-mortar charter schools in the state.[37]
WI	"Virtual charter school pupils' median scores on the mathematics section of the Wisconsin Knowledge and Concepts Examination were almost always lower than statewide medians during the 2005-06 and 2006-07 school years."[38]
CO	"Half of the online students wind up leaving within a year. When they do, they're often further behind academically then when they started."[39]
MN	"Compared with all students statewide, full-time online students had significantly lower proficiency rates on the math MCA-II but similar proficiency rates in reading."[40]
AZ	"[N]early nine of every 10 students enrolled in at least one statewide online course, all had graduation rates and AIMS math passing rates below the state average"[41]
OH	Online charter schools "rank higher when looking at their 'value-added' progress over one year rather than simply measuring their one-time testing performance." [42]
OH	"[N]early 97 percent of Ohio's traditional school districts have a higher score than the average score of the seven statewide" online charter schools. Those schools in Ohio also underperformed brick-and-mortar schools in graduation rates.[43]
PA	100% of these online charter schools performed significantly worse than feeder schools in both reading and math.[44]
AR	…online students performed at levels comparable to their face-to-face counterparts in six out of eight measures, and on the remaining two measures online students outperformed their face-to-face counterparts at a 0.10 statistically significant level.[45]
National	"…students at K12 Inc., the nation's largest virtual school company, are falling further behind in reading and math scores than students in brick-and-mortar schools." [46]

As Table 2.3 illustrates, with the exception of isolated studies in Ohio and Arkansas, the literature—mostly legislative audits and investigative journalism—has found that students enrolled in full-time virtual schools do not perform as well as students enrolled in brick-and-mortar settings. Further, most of those studies that have found gains for full-time virtual school students have suffered from ideological bias or methodological limitations. [47]

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

Literature	Finding
Bigbie & McCarroll	…over half of students who completed FLVS courses scored an A in their course & only 7% received a failing grade. [48]
Cavanaugh	…effect size slightly in favor of K-12 distance education. [49]
Cavanaugh et al.	…negative effect size for K-12 distance education. [50]
Cavanaugh et al.	FLVS students performed better on a non-mandatory assessment tool than students from the traditional classroom. [51]
McLeod et al.	FLVS students performed better on an algebraic assessment than their classroom counterparts. [52]
Means et al.	…small effect size favoring online cohorts over face-to-face cohorts based on limited K-12 studies. [53]
Chingos & Schwerdt	FLVS students perform about the same or somewhat better on state tests once their pre-high-school characteristics are taken into account. [54]

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

As Table 2.4 suggests, much research on student performance in supplemental virtual environments found that online students did as well or better than their brick-and-mortar counterparts. However, within the research literature it was generally understood that samples were often skewed in favor of the online student cohort[55]—though proponent professional associations typically ignored this factor.[56]

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

The online students sampled in comparisons of student performance between supplemental virtual schools and their brick-and-mortar counterparts were simply better

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

Literature	Finding
Kozma *et al.*	"…vast majority of VHS students in their courses were planning to attend a four-year college." [57]
Espinoza *et al.*	"VHS courses are predominantly designated as 'honors,' and students enrolled are mostly college bound."[58]
Roblyer & Elbaum	"…only students with a high need to control and structure their own learning may choose distance formats freely."[59]
Clark *et al.*	"IVHS students were highly motivated, high achieving, self-directed and/or who liked to work independently." [60]
Mills	"…typical online student was an A or B student." [61]
Watkins	"…45% of the students who participated in e-learning opportunities in Michigan were either advanced placement or academically advanced students." [62]

students.[63] As Rice concluded "that the effectiveness of distance education appears to have more to do with who is teaching, ***who is learning***, and how that learning is accomplished, and less to do with the medium" (emphasis added).[64] Clearly there is a deficit in the performance of virtual school students when a full range of students are included in the online cohort, as is seen from the results of the research literature on student performance in full-time virtual schooling.

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

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

In addition to student performance, other indicators of program quality are embedded in various types of evaluation and approval processes for virtual schools. In a study of this area, the Michigan Virtual Learning Research Institute described a variety of regulatory regimes based on the variables depicted in Table 2.6.[65] As is evident from this overview, a wide variety of variables can be combined in a number of ways, indicating that there is little agreement about reliable processes for approving and evaluating virtual schools. Providers or courses can be approved, for example, either with no monitoring, ongoing monitoring or annual monitoring of performance. Given the number of interactive variables, it's clear no agreement has yet been reached on best regulatory approaches to ensuring quality instruction.

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

> Cyber charter schools should be evaluated on several grounds. First, their compliance with applicable laws should be evaluated. Second, cyber charter schools should be required to provide an accounting of their funding and expenses. Finally, cyber charter schools should be required to demonstrate their progress."[66]

Interestingly, more than a decade later, a 2014 Michigan Virtual Learning Research Institute report indicated that based on the most recent data available at the time, only 31 of the 50 states had any formal evaluation or approval process beyond the same measures used to evaluate brick-and-mortar schools.[67] And of those 31 states, the majority had a primarily front-end approval process—meaning that once a course or program was initially approved, either by the state or some external accreditor, there was no mechanism in place to ensure that courses or programs continuously provided a quality instructional program.

Teacher Quality

Section I authors describe two policy issues surrounding high quality teachers: recruiting and training qualified teachers, and evaluating and retaining effective teachers. This area yields some research, but much of it continues to be context specific or methodologically limited.[68] For example, in an effort related to teacher training, DiPetro, Ferdig, Black, and Preston reported 37 best practices in virtual school teaching based on interviews with 16 teachers identified as effective by their administrators; however, the study lacked verification that the teachers actually implemented the practices or that the practices affected student outcomes.[69] This is not to suggest that this study is an example of poor research, simply that the practices identified are likely to be useful only for new and struggling teachers at that particular virtual school or in virtual schools serving similar student populations; in addition, a link between the practices and student outcomes needs to be established. Essentially, this study provides an example of research that is both context specific (that is, it applies primarily to the specific virtual school studied) and methodologically limited (that is, it relies on interviews without other methods of data collection/verification).

One of the primary challenges facing virtual schools—at least as it relates to staffing—is developing a pool of potential online teachers who already possess the skills necessary to provide and support instruction in a virtual school environment. There are still only a relatively small number of college and university programs throughout the country that provide pre-service or in-service training on teaching in a virtual school environment.[70] In fact, Kennedy and Archambault found that less than 2% of colleges and universities provided any content related to virtual schooling in their pre-service or in-service teacher programs.[71] Further, Rice and Dawley found that less than 40% of virtual school teachers reported receiving any professional development before they began teaching online.[72] Nor do states appear to provide substantive support in this area. For example, although Wisconsin became one of the few states to require that virtual school teachers have at least 30 hours of professional development before teaching online—effective as of 2010[73]—that legislative requirement was repealed in 2013.

Given these realities, it is generally up to the virtual schools themselves to provide their teachers with professional development to ensure that they become highly qualified online teachers. One example of a virtual school's professional development program for its online teachers is the VHS Collaborative (formerly the Virtual High School). The collaborative requires all teachers in partner schools who are interested in providing online instruction to complete an online course in relevant methodology.[74] Additionally, all potential online course developers must complete an online course in designing online instruction. Teachers have the opportunity to earn graduate credits for completing these courses through partner institutions, including Plymouth State University, Endicott College, and Framingham State University.[75] Most virtual schools offer their own teacher training in face-to-face or online formats, prior to their first online assignment as well as on an on-going basis.[76]

The Evergreen Education Group has proposed one possible solution to the teacher training issue in a policy brief entitled *Teaching Online Across State Lines*.[77] Its purpose was to "explore key teacher licensing issues, and [propose] an online teacher specialization that would allow a licensed teacher to teach online students in multiple states." As a part of that exploration, the authors made the following recommendations:

> All online teachers should be highly-qualified, licensed teachers. In addition, states should create an online teaching specialization that would allow a teacher licensed in any state to teach online students in any state without having to go through a separate licensure process in each state. This specialization would be based on online teachers meeting both of the following requirements:
>
> > A. They demonstrate that they are licensed and highly qualified in any state, and
> >
> > B. They demonstrate expertise in teaching online via either of two methods:
> >
> > - They have taken and passed a professional development course in teaching online by an approved provider, which includes a course specific

> to teaching in an online environment offered by universities, regional education agencies, or national providers of accredited programs, or

- They have successfully taught in an accredited online program for at least three years.

> The creation of an online teacher specialization raises the bar for teachers who are licensed in another state, by requiring that these teachers must demonstrate that they have taken and passed a professional development course that meets state requirements or confirm they have successfully taught in an accredited online program. This approach preserves the approach to teaching online used by many individual school districts without imposing any new mandates. Licensed teachers in a district may shift to teaching online with no additional state-created requirements.[78]

This kind of model is not without precedent. For example, Georgia and Idaho currently offer specific K-12 online teaching endorsements[79]; however, endorsements are still voluntary for online teachers in both states. Essentially, the proposal from the Evergreen Education Group is to extend these kinds of endorsements nationally, in much the same way that the National Board for Professional Teaching Standards created a certification program that teachers could complete and become nationally certified.

Another challenge facing virtual schools is the evaluation of online teaching in the absence of reliable and valid research to support high quality practice.[80] At present, eight states have adopted some form of online teaching standards and/or created some form of teacher certification for online teaching (Georgia, Idaho, Michigan, Louisiana, South Carolina, South Dakota, Utah, and Vermont).[81] In most instances, the adopted standards have been iNACOL's *National Standards for Quality Online Teaching*.[82] Unfortunately, they have not undergone the typical process for standards development, which generally includes three stages.[83] The first stage is to conduct a systematic literature review and then develop draft standards based upon sound research.[84] The second stage is to solicit the input from experts in the field on the draft standards; often, several rounds of expert feedback help refine the standards. The final stage is to translate the standards into a rubric for practitioners use. Researchers train individuals to use the rubric and then assess whether it is reliable when used independently—that is, whether inter-rater reliability is documented.[85]

The initial iNACOL *National Standards for Quality Online Teaching* were adopted in 2007 after a "literature review of the existing online teaching quality standards, then…a cross-reference of standards, followed by a survey completed by representatives of the iNACOL network…." The result was that the organization "chose to fully endorse the work of the Southern Regional Education Board (SREB) *Standards for Quality Online Teaching and Online Teaching Evaluation for State Virtual Schools* as a comprehensive set of criteria." [86] While the SREB standards indicate they "have been supported by practice over time, as well as substantiated by research,"[87] neither the SREB nor the iNACOL standards identified the research substantiating these claims. The 2011 revised version of the iNACOL standards indicated that "iNACOL organized a team of experts… to review these

new standards and the new literature on the topic" and that "iNACOL has received feedback from organizations using these standards for the development of professional development and evaluation of online teachers."[88] However, once again the standards were published without any documentation and verification. In fact, the only published research to support the iNACOL standards was a literature review conducted by Ferdig, Cavanaugh, DiPietro, Black, and Dawson to determine whether the standards were supported by research.[89] Interestingly, one of the things these researchers found was that the literature available to support the standards was limited because most of the literature focused on online learning with adult populations or on the traditional classroom environment.

One area that has often been neglected in the discussions around high quality teachers is the issue of what specific characteristics qualify a teacher for assignment in online environment. A thorny question worth pondering, though it will not be detailed here, is whether full-time virtual school teachers must be citizens of the state they teach in—or whether they might be as distant geographically and culturally as a foreign national living outside the US.[90] Some states seem to rely on training to determine qualification, while others appear to rely on certification. Natale and Cook's study of policies in Alabama, Florida, and Idaho offers illustration.[91] Both Alabama and Florida rely upon their statewide supplemental virtual schools to provide initial training and on-going professional development, while Idaho developed the online teaching endorsement referenced earlier. Alternatively, as Kraft found, many states require that a certain percentage of charter school teachers be state-certified.[92] However, the instructional model in many virtual charter schools requires parents/guardians—in the role of the learning coaches—to provide significant instructional support.[93] Kraft indicated that critics believe that because virtual charter schools "rely so heavily on parental support to oversee student work, parents should be considered 'teachers,' and if so considered, it is unlikely that [virtual] charter schools could meet the required percentage of certified teachers." [94]

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

In fact, this reliance on parents/guardians to perform instructional duties was the very basis of a legal challenge to the Wisconsin Virtual Academy in 2007.[95] In this case, the court sided against the virtual charter school, finding that "the school's parents assumed 'teaching' responsibilities for which they were not properly licensed as teachers by the state."[96] This prompted the Wisconsin legislature to enact the 2007 Wisconsin Act 222, which stated that the person responsible for providing the education services to the child is considered the child's teacher.[97] To date this sort of challenge has not been made in other states.

In the critical area of teacher quality, then, there is reason for continued concern. It is widely accepted that while some instructional practices are effective regardless of the medium, there are also pedagogical demands that are unique to the virtual school environment; however, few teacher education programs provide pre-service or in-service

instruction related to virtual schooling. It is true that many virtual schools indicate that they provide their own professional development to their teaching staffs. Yet, when virtual school teachers are surveyed, they typically report that they had received no training prior to assuming their positions. It is known that good research and good standards can provide the cornerstone of good practice—but much research remains geographically/methodologically limited, and currently non-research-based standards prevail. Finally, many proponents of virtual schooling publicly affirm the importance of a highly qualified teaching staff. In practice, however, significant instructional support is often left to parents and guardians—or their designates. The picture is not reassuring.

EMOs and Virtual Charter Schools

Last year's report questioned whether public funding for schools run by for-profit corporations constitutes an investment in quality education, and it recommended that researchers and policymakers begin to examine this area. At issue was the tension between the imperative to provide a quality online school experience and the need of corporations and for-profit EMOs to maximize profit.[98] For example, a recent study by Stanford University's Center for Research on Education Outcomes found that students attending charter schools run by EMOs had significantly less academic growth than students attending charter schools not managed by EMOs.[99] In this instance it should be noted that the study did not report on such variables such as whether schools were online or brick-and-mortar. However, these kinds of general findings continue to raise questions of whether these differences also exist in student performance in virtual schools run by for-profit as compared to nonprofit EMOs.

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

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

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

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

For example, last year's report for the 2012-13 school year indicated that in Utah, the nonprofit online charter Mountain Heights Academy was graded C, while the for-profit online charter Utah Virtual Academy was graded F.[100] A more complete exploration of the 2012-13 school year data from the Utah Public School Data Gateway is shown in Table 2.7.

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

A more detailed exploration of all of the 2012-2013 data in last year's report also yields no clear

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

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

*   *Excludes the online charter schools that were not rated.*

picture.[101] For example in Arizona, which rates schools as having met or not met an "annual measurement objective" (AMO), only one of five for-profit virtual charters met AMO. Nonprofit charters fared better, with eight out of 15 meeting the objective. However, in California, five of the state's 17 for-profit virtual charter schools met adequate yearly progress (AYP), while only three of the 14 nonprofit virtual charter schools met AYP. In Colorado, only one of the state's four for-profit virtual charter schools received an "acceptable" rating, while 16 of the 31 nonprofit virtual charter schools were found to be "acceptable." And so on with several more inconsistencies, as Table 2.8 indicates. While for-profits performed well (or as well as non profits) in several states, they also performed poorly in others. Interestingly, out of a total 46 virtual charter schools in nine states (Florida, Indiana, Kansas, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, and Utah), not one earned an acceptable rating. Those failing schools included 28 for-profit and 17 nonprofit. The clearest trend evident here is that many virtual schools are failing to meet their states' criteria for minimal performance.

An initial examination of 2013-14 data collected for this year's report similarly reveals a lack of clear trends. For example, data from Michigan, which rates schools as either being in green, yellow or red status (Table 2.9) and for data from Ohio, which rates schools using a letter grade (Table 2.10), both present mixed results.

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

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

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

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

Neither state shows a definitive trend in student performance in for-profit or nonprofit providers.[102] As was true of data in last year's report, the single trend evident is the high percentage of virtual charter schools that are rated as unacceptable.

Readers should, however, note that such performance comparisons of profit and nonprofit virtual charter schools are both cursory and superficial—and, they involve judgments

based on criteria that vary by state. To gain a deeper understanding of this issue, and the concerns raised by various journalists,[103] systematic research is needed to better determine if public funding for virtual schools—and especially those virtual schools intended to return a profit—is a sound investment in quality education. Such studies will have to take into consideration a much broader range of important variables, such as demographics of the student body in each school and the number and nature of the teaching staff.

Recommendations

There are many questions that practitioners and policymakers would like answered in relation to the successful implementation of virtual schooling. However, expansion of online options continues to outpace the availability of useful research. As a result, practitioners have little to guide them on how to effectively design, deliver, and support virtual schooling even as policymakers continue to search for effective regulatory models. Unfortunately, when it comes to the latter, "the current climate of K-12 school reform promotes uncritical acceptance of any and all virtual education innovations, despite lack of a sound research base supporting claims that technology in and of itself will improve teaching and learning."[104] Even more disappointing is the considerable enthusiasm from some proponents and their legislative allies of policies that often run contrary to what is actually known from the existing but limited research base.

Given these realities, it is recommended that:

- Policymakers regulate the growth and geographic reach of full-time, taxpayer-funded virtual schools. At present there are serious questions about the effectiveness of many models of virtual schooling. Until these questions can be adequately addressed, policymakers should focus their efforts on promoting virtual school models that have been shown to be successful, while limiting those models that have resulted in questionable student performance.

- State and federal policymakers create long-term programs to support independent research on and evaluation of virtual schooling, particularly *full-time* virtual schooling. More than twenty years after the first virtual schools began, there continues to be a deficit of empirical, longitudinal research to guide the practice and policy of virtual schooling.

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

1. Research is needed to determine the actual costs for providing a quality virtual schooling experience. To date the vast majority of literature related to the cost of virtual schooling has focused on funding in relation to brick-and-mortar schooling.

2. Research is needed to determine the appropriate criteria for making initial judgments about the potential of virtual schools, as well as identifying appropriate means of regular evaluation. At present there is a wide range of policies and procedures relating to approval and ongoing monitoring.

3. Research is needed to determine what constitutes good online teaching, how to effective prepare teachers for the virtual school environment, and what mechanisms are required to properly evaluate virtual school teachers. It is widely believed that teachers play a fundamental role in the success of students regardless of the setting.

4. Finally, additional research is needed to determine whether the business model of for-profit virtual schooling affects the factors that lead to a high quality online learning experience. It is unclear, but essential to know, whether alternative management arrangements for virtual schools affects the quality of education provided.

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