

SECTION II

ASSESSING VIRTUAL SCHOOLS AFTER A GLOBAL PANDEMIC: A REALITY OF UNFULFILLED PROMISES

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Executive Summary

Proponents of full-time virtual schools—stand-alone schools that offer their entire curriculum and teaching online—have long made extensive claims about their benefits. During the COVID-19 pandemic, these schools have experienced explosive growth. This makes it an opportune time for policymakers to reevaluate the promises against the accumulating evidence.

This literature review examines eight key claims advocates make about virtual schools. These are that virtual schools:

- revolutionize learning with technology;
- improve traditional school districts organized mainly around brick-and-mortar schools;
- promote quality choices;
- offer personalized and flexible instruction;
- provide high-quality and expanded interaction with teachers;
- save at-risk students;

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- provide educational access to students with special needs and during emergencies; and
- expand access to educational materials.

The review compares these claims to corresponding academic research and finds that virtual schools, as currently implemented, fall short of fulfilling these promises.

The review only examines full-time virtual schools. It does not include other types of online programs used by brick-and-mortar schools, like blended learning or emergency forms of online instruction implemented during the pandemic. These differ in significant ways from full-time virtual schools. Although blended learning is an important modality and has been explored in prior editions of this series, the focus here is on full-time virtual schools due to the policy discourse and enrollment trends during and following the pandemic.

The driving force behind full-time virtual schools up to now has been a philosophy of technology solutionism operating in an unchecked free market. Virtual schools, this review suggests, are most beneficial when deployed as tools with specific purposes rather than as organizations that prioritize enrollment expansion in a taxpayer-subsidized, free-market system. The way to achieve the optimal scenario for virtual schools is to rely on experts to design inclusive and universally beneficial systems.

Recommendations:

State policymakers can take specific actions to ensure that virtual schools contribute positively to the education landscape:

To support students and families, it is recommended that state policymakers:

- Establish a virtual school student intake screening and encourage parents to reconsider enrollment if a virtual school is not a good fit for their students.
- Fund one-on-one counseling for at-risk students and require the counselor to recommend to the family if virtual schools are inappropriate for the at-risk student.
- Require Individualized Education Plans for all students in virtual schools, akin to those special education students receive. The plans should indicate if students need standardized or personalized programs and then deliver content according to these plans.
- Notify parents and encourage them to withdraw their students from virtual schools if the student is failing to obtain mastery.

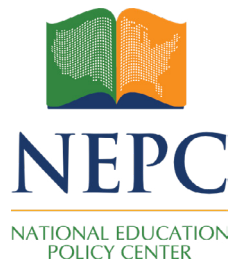
To manage virtual school enrollment and performance, it is recommended that state policymakers:

- Require virtual schools to train all incoming students on using their software and programs through in-person training sessions.

- Set maximum teacher-to-pupil ratios for virtual schools that align with statewide averages.
- Require virtual schools to state publicly if their programs are standardized or personalized.
- Require virtual schools to align curricula with state standards and use student mastery as a performance indicator.
- Require virtual school graduation rates to align with statewide averages. If the virtual school fails to meet these benchmarks, assign it probationary status after a year and close after five years of probationary status.
- Require virtual schools to maintain a within-school-year student mobility threshold equal to the mobility rate of brick-and-mortar schools.

To improve system-level capacity and accountability, it is recommended that state policymakers:

- Audit and monitor special education Individualized Education Plans in virtual schools.
- Enact yearly enrollment growth caps for virtual schools.
- Require virtual school field experiences for teacher licensure.
- Fund professional organizations and schools of education to develop teacher training programs for virtual schools and tie these programs to teacher licensure.
- Establish virtual school-specific licensure requirements derived from recognized standards for quality online teaching such as the National Standards for Quality Online Learning.
- Conduct yearly costing-out studies and set statewide virtual school tuition rates in alignment with the actual costs of operating virtual schools.
- Create programs in state education departments that oversee virtual school operations, allowing for implementation and oversight of the preceding recommendations.



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Introduction

The COVID-19 pandemic prompted families across the country to transition from in-person to full-time online learning. More than 90% of families in the U.S. reported using some form of distance or online learning during the peak of the crisis.¹ But while the pandemic led to a sudden increase in emergency online learning, virtual schools have existed in the United States since the early 1990s.² Despite concerns about educational performance before and during the pandemic³ and equity issues for learners in virtual schools,⁴ the sector continues to expand.⁵ Section I of the report shows that virtual school enrollment nearly doubled during the pandemic.

This section of the report assesses the literature on virtual schools⁶ and evaluates research on their performance against claims made about them. Given the time virtual schools have had to develop and the recent expansion they have undergone, it is an opportune moment to evaluate their effectiveness. The review shows that even though virtual schools are suitable in certain circumstances, there are significant concerns about their overall quality and accountability. This review examines eight claims about virtual schools and shows the research-based reality of each:

Claim: Full-time virtual schools revolutionize and improve learning with contemporary technologies.

Reality: Virtual schools have not transformed student learning or acted as a beneficial disruptive innovation. In many cases, they have harmed the public education system.

Claim: Competition from virtual schools will efficiently improve traditional school districts organized mainly around brick-and-mortar schools.

Reality: Competition has negatively impacted traditional school districts organized mainly around brick-and-mortar schools, and competitive environments have been inefficient.

Claim: Virtual schools advance parental choice to provide better schooling options for families.

Reality: While choice has expanded, the options available are not necessarily better.

Claim: Virtual schools provide personalized and flexible learning.

Reality: Virtual schools provide flexibility but not personalization.

Claim: Virtual schools provide high-quality instructional support with extended teacher interaction.

Reality: Virtual teachers are undertrained and too overloaded to provide high-quality instruction.

Claim: Virtual schools save students at risk of dropping out of school or with substantial social issues that negatively affect their education.

Reality: Virtual schools are often not appropriate for at-risk students.

Claim: Virtual schools provide educational access to students with special needs and allow for continued schooling in emergency health situations.

Reality: Virtual schools can serve as an emergency educational option, but they struggle to adhere to mandates of the Individuals with Disabilities Education Act (IDEA).

Claim: Virtual schools expand access to educational materials.

Reality: Access becomes irrelevant if students cannot learn and understand the material.

Review of the Literature: Claims Made by Virtual School Proponents vs. Evidence-Based Reality

Claim: Full-time virtual schools revolutionize and improve learning with contemporary technologies.

Virtual school advocates argue that the schools are a transformative force in K–12 education and serve as a “disruptive innovation”⁷ that will lead to significant changes in the education landscape.⁸ The central claim of the disruptive innovation concept is that when industries encounter a superior product or process, the organizations with the new product or process replace those who fail to adapt. A commonly cited example in this context is how the failure of Blockbuster to adapt to Netflix’s superior process for home cinema led to Blockbuster’s downfall. Stanford professors Terry Moe and John Chubb allude to this process in their 2009 book, *Liberating Learning: Technology, Politics, and the Future of American Education*, arguing that virtual schools and online learning will change American education and that “the forces of resistance will ultimately be overcome, leading to a transformation of the American school system.”⁹ The problem with this claim is that the predicted positive disruption has not materialized despite decades of virtual schools, and, despite the hopes

of the disrupters, the lack of disruption is fortunate because virtual school quality has been remarkably poor.

Virtual schools are not a superior product or process to brick-and-mortar schools and families are not enrolling in them on a scale that would lead to disruptive innovation. Research consistently shows that virtual schools produce adverse academic outcomes.¹⁰ Students have not performed well even where virtual schools have seen significant growth.¹¹ The only study reviewed that found positive effects of virtual schooling was a longitudinal study that followed students over time. The study found that students who persisted in virtual schools for several years, likely due to their unique circumstances, were more likely to have better scores in some academic areas.¹² However, all other research, including a more recent longitudinal study, shows virtual schools have lower academic achievement outcomes for students in years they attended virtual schools compared to when they attended brick-and-mortar schools, including students who moved and who stayed enrolled.¹³ Overall, the weight and abundance of research evidence suggests virtual schools fail to promote positive academic achievement outcomes.

The first K–12 virtual school opened more than three decades ago,¹⁴ and the proliferation of virtual schools has been driven by the virtual charter school movement, which began in the late 1990s.¹⁵ Virtual charter schools are virtual schools that rely on statewide charter school policies to govern them, typically drawing state or funding from traditional school districts organized mainly around brick-and-mortar schools. Despite a rise in enrollment in virtual schools over the last 30 years, the enrollment trends do not support the idea of virtual schools being a disruptive innovation, and post-pandemic education goals from an ideological range of stakeholders center on the need for in-person learning.¹⁶

Virtual schools align with Justin Reich’s characterization of technologies that have “failed to disrupt.”¹⁷ Prominent educational organizations do not act urgently to respond to virtual schools. For instance, teacher training programs tend not to teach pre-service teachers strategies for virtual school instruction.¹⁸ Despite calls for a shift in the teacher training paradigm, higher education leaders have not included virtual school teacher training in their programming.¹⁹ The resistance of teacher training programs to incorporate online teaching practices or place pre-service teachers in virtual classrooms suggests a lack of urgency and a sense that virtual schools are not creating the disruptive environment that business and tech-minded individuals had expected. Despite the increase in enrollment observed during the pandemic the overwhelming majority of students are poised to learn in brick-and-mortar schools.

It is undeniable that technology offers benefits in appropriate contexts. Virtual schools can serve as an education option when appropriate. However, the virtual school sector is characterized by “technology solutionism,”²⁰ an over-reliance on technology to solve complex problems, creating opportunities for unethical actors to thrive. The unethical actors take advantage of policy loopholes and sell virtual schools as the solution to various educational challenges they are not equipped to address. Rather than becoming a disruptive innovation and promoting any sort of positive disruption, virtual schools have enabled unethical actors to exploit and harm the public education system.

Section III of this report underscores the accountability challenges related to unethical actors and reveals that lawmakers nationwide have struggled to implement safeguards on virtual schools. The lack of accountability occurs even though taxpayers subsidize the development of nonprofit and for-profit virtual schools. Legislative activity continues to stall, despite the enrollment growth and increased number of virtual schools. The enacted laws are not informed by empirical research, and, in many cases, lawmakers enact policies that oppose the recommendations presented in this and previous reports.

Reality: Virtual schools have not transformed student learning or acted as a beneficial disruptive innovation. In many cases, they have harmed the public education system.

Virtual schools are not a disruptive innovation because less than 1.5% of all students enroll in them, and students leave virtual schools at an alarming rate. Virtual schools negatively affect students who move and the brick-and-mortar schools they leave. Free-market designs have caused high student turnover in virtual charter schools because they are premised on constant enrollment churn as a mechanism to improve quality through competition.²¹ A way to improve this reality is for school districts to intentionally design online programs and coach students into choosing virtual schools only when the model is suitable for their unique needs. Current practices often prioritize technology solutionism and focus solely on the capabilities of the technology, whereas best practices suggest that school leaders should prioritize aligning technology with instructional goals for a unique population of online students.²² A way to improve this reality is to engage in more policy planning and intentionality in contrast to the current trend of unregulated market and technology solutionism.

Claim: Competition from virtual schools will efficiently improve traditional school districts organized mainly around brick-and-mortar schools.

Proponents of expanding virtual schools argue that virtual schools induce competition in education, leading to improvements across various school types.²³ This argument emerges from the market-based educational reform movement, which assumes that choice creates a “rising tide that lifts all boats.”²⁴ Market reformers argue that choice options, such as virtual schools, compel other schools to act in ways that efficiently lead to improvement and innovation.

There is a significant body of research on the impact of competition on school improvement but less on the competitive effects of virtual schools. The overarching literature on competitive effects indicates that innovation and efficiency are not automatic outcomes of competitive environments. Some studies show limited competitive effects in specific choice-based models and with certain aspects of the educational process, but these findings are inconsistent.²⁵ Organizations often adopt similar practices rather than innovating, a phenomenon known as *isomorphism*.²⁶

The literature on the competitive effects of virtual schools is less developed, but existing

studies should provide skepticism. On a superficial level, virtual schools prompt competition due to a gradual enrollment increase in virtual schools, which the pandemic exacerbated.²⁷ The question is if these enrollment increases result in innovation and efficiency across the system. The few existing studies that focus on virtual charter schools show that competition related to virtual schools has done more harm than good.²⁸ Studies have analyzed the competitive effects of these schools in Pennsylvania. They show that virtual charter schools reduce school district budgets,²⁹ harm rural schools because of rural districts' incapacity to absorb student losses,³⁰ modestly affect online learning adoption but also follow patterns of isomorphism,³¹ and are not cost-efficient.³² As Section I of this report shows, the virtual charter sector is dominated by large chains, where dozens of schools use the same curriculum products and instructional methods. This finding suggests that virtual schools are not sites of innovation and experimentation but monolithic monopolies.

The enrollment expansion of virtual charter schools may have accelerated school districts' creating or adopting their own virtual schools. However, a reasonable counterargument from the virtual school competitive effects literature is that school districts would have adopted online learning regardless of competition because districts respond to other forms of pressure such as state agency guidance and mandates.³³ Recently, the pandemic, rather than competition, was the primary driving force behind the increase in virtual school enrollment. Either way, maintaining a competitive environment is not cost-effective, particularly in rural areas, as funding multiple programs is more costly and less efficient than funding one. Section III of this report further explains virtual school cost inefficiencies.

Despite these inefficiencies, lawmakers have struggled to enact laws establishing appropriate funding formulas that reflect the actual cost of operating virtual schools. While virtual schools may cost less, virtual school funding policies across states have inflated costs. As Section III reports, some virtual charter schools have accumulated fund balances in the tens of millions of dollars. Lawmakers have also struggled to implement reforms to regulate enrollment trends driven by the free-market models that govern virtual schools, as their attempts to enforce boundary restrictions have found limited success. Some states have even relaxed restrictions, making virtual school enrollment more permissive.

Reality: Competition has negatively impacted traditional school districts organized mainly around brick-and-mortar schools, and competitive environments have been inefficient.

The current model of virtual schooling destabilizes brick-and-mortar schools through the loss of economies of scale and interruptions for students entering and leaving virtual schools. While some families may have positive experiences with virtual schools, their experiences come at the cost of negative impacts on the education system, and most students choose to remain in brick-and-mortar schools. The free-market enrollment model has led to inefficiencies because a robust market with fully funded alternatives is more expensive, due to the need to fund multiple competing programs. The current funding policies inflate the budgets of virtual schools and allow for misconduct. While virtual schools gained popularity because of the school choice movement, including the rise of virtual charter schools, traditional school districts have created virtual schools and often use the same software and

content as virtual charter schools.³⁴ A way to improve this reality is to prompt less chaotic enrollment patterns and determine the actual costs of running virtual schools.³⁵ Effective enrollment policies disincentivize abuse, and costing-out audits provide information on the actual costs of programs.

Claim: Virtual schools advance parental choice to provide better schooling options for families.

Virtual school advocates argue that virtual schools play a crucial role in school choice. In *Liberating Learning: Technology, Politics, and the Future of American Education*, Moe and Chubb highlight virtual charter schools as a prime example of the potential benefits of school choice. They argue that virtual charter schools embody the fundamental principles of the choice movement.³⁶

Research on the school choice process has focused on understanding how parents navigate their available options and what motivates their decisions, which helps assess the effects of school choice policies.³⁷ Researchers have categorized parents' choice decisions into pull and push factors.³⁸ The pull factors that draw parents to virtual schools include the opportunity for individualized or flexible learning, the ability for parents to have more direct control over their children's education, and the ability to instill their personal values or religious beliefs.³⁹ Push factors that drive parents away from brick-and-mortar schools include bullying and health concerns. These factors are more common among children with disabilities.⁴⁰

Families place varying emphases on push and pull factors, with differences based on demographics and past educational experiences.⁴¹ Current research has built on past work showing that when virtual charters first emerged, the novelty of online schooling attracted families who were desperate to try anything other than the brick-and-mortar options that were not working for them.⁴²

Choice patterns in virtual schools also relate to the demographic composition of students. An analysis of virtual charter schools on a national level show that they enroll lower percentages of economically disadvantaged students and higher percentages of White students compared to the overall student population in the state where they are located.⁴³ Section I of this report indicates a recent shift in these trends. Virtual schools are diversifying like other schools in the United States. As Figure 3 in Section I shows, the racial composition of virtual schools mirrors the national average for White students; however, virtual schools now have a higher concentration of Black and multi-race students than the national average. Hispanic and Asian students remain underrepresented in virtual schools.

Enrollment demographic findings vary by state, suggesting there is not a consistent population of students who enroll in virtual schools, particularly the virtual charter schools for which there have been better data to track. Much of the research on specific enrollment patterns is from the author's work on virtual charter schools in Pennsylvania. Mann and Baker found that demographic patterns in enrollment changed as the initial excitement surrounding virtual schooling subsided. As information about the low quality of virtual charter schools became widely known, virtual schools enrolled fewer students from financially ad-

vantaged traditional brick-and-mortar school districts.⁴⁴ Mann and colleagues show that an individual rural student is more likely than an urban student to enroll in a virtual charter school, although there are fewer rural than urban students overall.⁴⁵ Mann and Kotok examined student moves within the virtual charter school marketplace, showing that those selecting among virtual charter schools were likelier to choose lower-performing virtual schools, and choices exacerbated inequality.⁴⁶

Overall, it is difficult to argue that, academically, virtual schools provide better academic options for families. While having more choices promotes the goal of expanding educational choice, studies show that choice does not always result in significant academic gains for students.⁴⁷ Table 6 of Section I of the report adds to the abovementioned research on performance and shows that 57.4% of virtual schools received an unacceptable rating in their most recent state performance rating. Table 7 in Section I shows virtual school graduation rates are 61.9%, compared to the national average of 86.5%. These findings are consistent with previous NEPC reports on virtual schools dating back to 2012.

Reality: While choice has expanded, the options available are not necessarily better.

Free-market assumptions and the allure of technology have led to thinking that virtual schools will be of high quality or at least will innovate until they get to that point. Virtual schools have existed for 30 years and repeatedly deliver poor educational outcomes and low graduation rates. A way to improve this reality is to hold virtual schools accountable for their dismal outcomes and graduation rates. The free market has proven not to hold itself accountable, and technology is not always a solution to providing high-quality education. Appropriate policies force virtual schools to find the appropriate uses for their programs or face the consequences if they do not.

Claim: Virtual schools provide personalized and flexible learning.

Advocates and providers of virtual schools argue that one benefit they offer is the ability to provide students with personalized and flexible learning experiences.⁴⁸ Personalized means students can choose what they are interested in or need to learn, and teachers can assist them in achieving these goals. Flexible means students can complete content at their own pace or at a time of their choosing. The challenge stemming from the research is that it has been difficult for researchers to understand virtual schools' curricula and instructional practices. One of the most informative studies on the subject is the 2015 *Mathematica Policy Research* report, which provides insight into the practices of virtual charter schools. The report stated that most of the time students spend in these schools is "individualized, student-driven independent study."⁴⁹

Another challenge with personalization and flexibility is that these aims are often in opposition. Personalized learning environments rely on self-regulated learning and require structures that provide immediate data and feedback, student voice, and multiple forms of support.⁵⁰ These features of personalized learning environments do not align with flexibil-

ity, as they are resource-intensive and require direct, often immediate, teacher feedback. Another approach to providing personalization is through differentiated instruction that caters to the specific needs of students from diverse backgrounds. Online teachers report that they differentiate instruction for their students, but their strategies do not align with practices that positively impact student achievement, as online teachers tend to focus on a flawed notion of “learning styles” rather than on differentiation decisions based on student achievement data.⁵¹

Online schools typically rely on standardized materials and expect students to learn independently or with the support of their parents. As Curtis and Werth explain, a key element to student success in virtual schools is “Students must be self-motivated, engaged and participating, and accountable for their own learning. Parents should be available to monitor, mentor, and motivate students.”⁵² Virtual schools offer standardization rather than personalization, so they are more flexible than brick-and-mortar schools regarding pace and place. However, virtual schools offer a personalized and flexible pace within a standardized curriculum rather than genuine personalized learning. The standardization and rigidity of material are due to the adoption of free-market strategies in their enrollment models, prioritizing reaching many students over personalization. True personalization includes interactive and engaging experiences, often at the cost of flexibility. Virtual schools’ only personalized feature is the speed at which a student moves through content.

Reality: Virtual schools provide flexibility but not personalization.

Flexibility depends on a predetermined curriculum that students can access as they see fit. Personalization, on the other hand, depends on a teacher to understand the needs of each student and design instruction and curriculum accordingly. Free-market pressures force virtual schools to remain flexible but not personalized, because a standardized, one-size-fits-all model of delivering content and curricula is more efficient than designing unique and individualized learning experiences. Assumptions about technology suggest that online learning can deliver personalized learning, but this is not the reality of what occurs in most virtual schools. A way to improve this reality is to ensure that students who require flexibility receive it and that students who require personalization receive it. This strategy requires virtual schools to determine case-by-case the needs of students and design programs that align with their needs.

Claim: Virtual schools provide high-quality instructional support with extended teacher interaction.

Virtual schools use language on their websites that suggests their teachers “interact and actively engage students.”⁵³ Research shows that quality online programs develop interactive and engaging experiences among teachers and students.⁵⁴ Despite the importance of interaction in online education, a standard model in virtual schools is to limit teacher interaction and instead rely on “learning coaches” to supplement the learning experience.⁵⁵ A learning coach is a parent or caregiver who provides support and assistance to the student in areas where the teacher cannot fully engage or provide support due to the nature of the

online setting. Teachers have observed the parent’s role in virtual schooling and report that parents indeed play an active role in scheduling educational activities, fostering relationship building, motivating student learning and engagement, and sometimes acting as the primary instructor.⁵⁶ Virtual schools broaden the role of parents in the educational process in a more active and influential role akin to homeschooling.⁵⁷ The advantage of this quasi-homeschooling model is that it allows for flexibility in terms of time and location for students to learn. This flexibility makes arranging real-time interactions with teachers and peers challenging.

Bradley-Dorsey and colleagues explain the tension between flexibility, interaction, and teacher quality by showing that interactions between students and teachers in virtual schools have been positively associated with various academic outcomes. Virtual schools prioritize flexibility, which limits opportunities for these interactions to occur.⁵⁸ The authors wrestled with this tension, saying, “Student-student and teacher-student interaction matter in both in-person and virtual schools. With that said, many virtual schools design their courses not to maximize student and teacher-student interaction, but to maximize flexibility for students to complete work anytime/anywhere.”⁵⁹

Section I of the report shows that virtual schools have significantly higher student-to-teacher ratios than brick-and-mortar schools. These ratios promote a reliance on supplementary instruction from parents and caregivers. If a parent cannot provide support, students may receive less instructional support than in a brick-and-mortar setting. The quasi-homeschooling model allows virtual schools to have higher teacher-student ratios, which would need to be reevaluated if a model with more teacher interaction were implemented.⁶⁰

An additional challenge for virtual school teachers is that they are not trained to teach in online environments and do not need to meet specific virtual school licensing requirements akin to what is seen in brick-and-mortar schools.⁶¹ Managing the unique aspects of online teaching requires specialized training and support.⁶² Teacher preparation programs typically are designed for face-to-face instruction and do not include virtual school teacher training. Most teachers receive their training after they start teaching in virtual schools.⁶³

Reality: Virtual teachers are undertrained and too overloaded to provide high-quality instruction.

Free-market pressures seek to minimize costs and load as many students as possible into classrooms, and the allure of technology prompts assumptions that online programming makes this arrangement manageable. Teachers in online schools have an excessive number of students and are unprepared.⁶⁴ Virtual schools rely on families to perform unpaid work to account for bloated student-teacher ratios. This model disadvantages families without resources and suggests that virtual schools can only cater to two-parent families with single incomes or more flexible work schedules. It is a modern version of homeschooling but with the added element of using public school funding to support it.⁶⁵ A way to improve this reality is to train virtual school teachers before they enter their roles, verify that they are highly qualified, and support virtual school teachers by reducing the number of students they are required to teach. Training, verifying, and supporting virtual school teachers is a

multipronged strategy that involves stakeholders from across the government and higher education.

Claim: Virtual schools save students at risk of dropping out of school or with substantial social issues that negatively affect their education.

Virtual schools could serve as a last-chance option for students who have had negative experiences in prior academic settings.⁶⁶ These students include those who may be at risk of dropping out or have experienced bullying or other negative experiences in brick-and-mortar school settings. The rationale behind the last-chance claim is that brick-and-mortar education settings have not been successful for these students, and alternative settings may provide a better fit to complete their studies.

The research about online learning and its effectiveness with at-risk students initially focused on credit recovery models. Most brick-and-mortar schools and districts supplement their programs with online credit recovery programs. As early as 2009, 88% of school districts offered online credit recovery programs.⁶⁷ For at-risk students to be successful in these programs, as is the case in brick-and-mortar schools, it is essential for them to feel a sense of care. Establishing caring relationships in online programs, particularly asynchronous ones, is challenging.⁶⁸

As research on virtual schools has progressed, it has become clear that the findings from online credit recovery programs are relevant to virtual schools. The advantages of online learning can be drawbacks for at-risk students. The flexibility and self-paced structure of online programs can be beneficial for students with chaotic home lives but can hinder students with poor self-regulation skills.⁶⁹ For example, in one statewide virtual school, students with at-risk characteristics performed poorly in the virtual school setting compared to their peers.⁷⁰

Research indicates that virtual schools are more likely to serve White and academically advantaged students than disadvantaged students.⁷¹ Section I explains that the racial and ethnic demographic trends in virtual schools seem to be evolving, but Figure 4 in Section I shows virtual schools still only served 25.6% of students eligible for free and reduced-price lunch (FRL) in 2021-22, compared to the national average of 60.2% FRL students. Demographics alone do not determine if students are at risk, but they are helpful indicators. If virtual schools effectively served at-risk students, one would expect the demographic composition of these schools to reflect different patterns. These demographic patterns add concern because virtual schools' academic indicators and graduation rates are still dismal, despite their enrolling more students from advantaged backgrounds.

Reality: Virtual schools are often not appropriate for at-risk students.

Virtual schools have dismal academic quality records. Section I highlights virtual schools' persistent academic difficulties, adding to concerns found in other research studies. These struggles are compounded for at-risk students. Virtual schools remain a last resort for at-risk students who have struggled in other settings. A way to improve this reality is providing

students who are struggling in the brick-and-mortar classroom setting with more in-person support rather than moving them to a virtual school. While there may be circumstances such as work or family obligations that make virtual schooling the only option, it is crucial to develop more effective interventions in these cases.

Claim: Virtual schools provide educational access to students with special needs and allow for continued schooling in emergency health situations.

Virtual school providers argue that, at the very least, they can offer adequate special education services to students, while some imply they may even be able to provide superior services.⁷² Scholars concur that when used appropriately, virtual learning has the potential to provide powerful opportunities for students with special needs. There is an established body of research on best practices for teaching special education in a virtual setting in an inclusive manner, including guidance from teachers with experience working with students in these settings.⁷³ Virtual schools have not been consistently implementing these best practices. Evidence from one state suggests that virtual charter schools enroll lower numbers of students with disabilities, particularly of those with more severe needs, and that they are not designed to serve students with autism or traumatic injuries.⁷⁴ As virtual schools emerged and developed, there has been a lack of clear guidance and oversight for students with Individualized Education Programs (IEPs), resulting in inadequate support for students with special needs.⁷⁵

Virtual schools can offer some students a safer space than previous settings but fall short of providing adequate special education support. Evidence from one statewide virtual school suggests that special education students have lower academic achievement than students without special needs.⁷⁶ Beck and colleagues explain that despite concerns about academic quality, families with special needs students leave brick-and-mortar educational environments due to a lack of support for their child or instances of bullying; they show these families report elevated satisfaction levels with their new settings.⁷⁷ Ortiz and colleagues explain that parents appreciate a welcoming atmosphere and supportive staff in virtual schools; however, these schools often provide limited special education services, and many parents struggle with the new responsibility of serving as a learning coach.⁷⁸ Virtual schools can benefit students with special healthcare needs who have no other options, as they can accommodate needs that brick-and-mortar schools may not be able to. However, this group of students makes up an exceedingly small percentage of those enrolled in virtual schools.⁷⁹

Other challenges facing special education in virtual schools include difficulties adhering to the provisions outlined in a student's IEP and meeting the requirements of the Individuals with Disabilities Education Act (IDEA).⁸⁰ Lawmakers have struggled with addressing these challenges because they often focus on funding concerns and apply policies related to all charter schools rather than providing specific guidance and regulations for virtual schools and students with special needs.⁸¹ A recent special education U.S. Supreme Court case has altered standards, leading virtual special education researchers and educators to call for more significant support for their students, as further compliance concerns are expected based on the new interpretation of the law.⁸²

Reality: Virtual schools can serve as an emergency educational option, but they struggle to adhere to mandates of the Individuals with Disabilities Education Act (IDEA).

IDEA mandates that students with special needs receive a free and appropriate education in the least restrictive environment. Many special needs students are not encountering virtual school environments that suit their needs. Virtual schools struggle with meeting the goals of IEPs. A way to improve this reality is for virtual schools to offer programs that specifically meet student IEP requirements. If a virtual school is not an appropriate placement for a student with special needs, then students should move to other settings. Brick-and-mortar schools in traditional school districts are subject to regular monitoring and review of their compliance with special education standards, and legal action often occurs in cases of non-compliance. Virtual schools should face the same scrutiny.

Claim: Virtual schools expand access to educational materials.

The digital divide, which refers to the disparities in access and use of information and communication technologies (ICT), is a widely discussed issue in the technology industry. The Organization for Economic Cooperation and Development (OECD) describes it as “the gap between individuals, households, businesses, and geographic areas at different socioeconomic levels with regard both to their opportunities to access ICT and to their use of the internet.”⁸³ The digital divide is pertinent to virtual schools because they could enhance access through the internet, which hypothetically enables anyone with an internet connection to access content and advanced courses.⁸⁴

There are concerns that virtual schools fail to mitigate the digital divide due to disparities in proficiency and technology usage.⁸⁵ Access is known as the first level of the digital divide, but the two other levels to the digital divide, proficiency and usage, suggest that even if individuals have equal access to technological infrastructure there may still be divides. Section I demonstrates the multiple ways in which virtual schools produce worse student outcomes than brick-and-mortar schools. These adverse outcomes suggest a proficiency divide in mastering educational materials. Access to materials alone is insufficient if students cannot comprehend the material.

It is also unclear whether the materials provided by virtual schools are even adequate. Research on this topic is ongoing, and further studies are necessary to understand the nature of the materials offered by virtual schools. In one example, McBean and Feinberg criticized the history curriculum offered by a large virtual school in Georgia, arguing that it fails to represent marginalized perspectives and voices.⁸⁶ Virtual schools frequently make sample lessons and materials available on their websites that appear to comply with the state standards of the virtual school’s location; however, there has been no comprehensive examination of these materials. Scholars have begun to address this gap by developing frameworks for evaluating the quality of online curricula that teachers and school administrators can use.⁸⁷ Given the inadequate learning outcomes and ambiguous nature of the materials, insufficient evidence supports the assertion that virtual schools improve access to educational materials.

Reality: Access becomes irrelevant if students cannot learn and understand the material.

The widespread availability of virtual schools superficially suggests that they provide access to educational content unavailable without them. For example, rural students without AP teachers can access AP content through a virtual school. The reality is less optimistic. Access to material is irrelevant if students cannot learn it. Students require the skills, dispositions, and environments that allow them to benefit from expanded material. A way to improve this reality is to ensure students have actual access by teaching them to use online materials. While it is essential to support infrastructure such as broadband, educational access is more than just infrastructure. Students will only have genuine access if they understand how to use the technology.

Conclusion and Recommendations

Virtual schools have existed for more than 30 years, but they have not lived up to the claims made about them. The COVID-19 pandemic has brought virtual schooling to the attention of many families. Even lawmakers who align with the political ideology that previously advocated for expanding virtual schools now advocate for in-person learning.⁸⁸

Virtual schools are not fulfilling their promises due to virtual school policy models that incentivize adverse outcomes. These models emerged because those who designed them relied on two flawed assumptions. The first is that unregulated free markets can effectively address educational challenges. The second is that technology seamlessly replicates brick-and-mortar schools' teaching and learning practices. The reliance on these assumptions allows unethical actors to promote technology solutionism and sell virtual schools when they are inappropriate.⁸⁹

Free-market enrollment models also undermine appropriate school funding plans. Virtual school funding rewards enrollment increases instead of properly assigning students. When funding is solely based on enrollment numbers and expansion, schools enroll students who are not a good fit for their programs, and schools prioritize reducing costs over quality. Additionally, education is not just about transmitting a set of standards to students. Learning is closely tied to place, and the physical environment of schooling plays a critical role in shaping the experiences of children.⁹⁰

Of course, not all forms of choice are detrimental. Families have a unique understanding of their children's needs and play a vital role in their education. Similarly, technology is not inherently harmful. When used appropriately, online learning offers powerful experiences to supplement face-to-face settings. Technology, computers, and online learning are tools to be used judiciously and appropriately. Virtual schools, this review suggests, are most beneficial when deployed as tools with specific purposes rather than as organizations that prioritize enrollment expansion in a taxpayer-subsidized, free-market system. The way to achieve better uses of virtual schools is to rely on experts to design inclusive and universally beneficial systems.

Policymakers can take specific actions to ensure that virtual schools contribute positively to the education landscape in the United States:

To support students and families, it is recommended that state policymakers:

- Establish a virtual school student intake screening and encourage parents to reconsider enrollment if a virtual school is not a good fit for their students.
- Fund one-on-one counseling for at-risk students and require the counselor to recommend to the family if virtual schools are inappropriate for the at-risk student.
- Require Individualized Education Plans for all students in virtual schools, akin to what special education students receive. The plans should indicate if students need standardized or personalized programs and then deliver content according to these plans.
- Notify parents and encourage them to withdraw their students from virtual schools if the student is failing to obtain mastery.

To manage virtual school enrollment and performance, it is recommended that state policymakers:

- Require virtual schools to train all incoming students on using their software and programs through in-person training sessions.
- Set maximum teacher-to-pupil ratios for virtual schools that align with statewide averages.
- Require virtual schools to state publicly if their programs are standardized or personalized.
- Require virtual schools to align curricula with state standards and use student mastery as a performance indicator.
- Require virtual school graduation rates to align with statewide averages. If the virtual school fails to meet these benchmarks, assign it probationary status after a year and close after five years of probationary status.
- Require virtual schools to maintain a within-school-year student mobility threshold equal to the mobility rate of brick-and-mortar schools.

To improve system-level capacity and accountability, it is recommended that state policymakers:

- Audit and monitor special education Individualized Education Plans in virtual schools.
- Enact yearly enrollment growth caps for virtual schools.
- Require virtual school field experiences for teacher licensure.
- Fund professional organizations and schools of education to develop teacher training programs for virtual schools and tie these programs to teacher licensure.
- Establish virtual school-specific licensure requirements derived from recognized standards for quality online teaching such as the National Standards for Quality Online

Learning.

- Conduct yearly costing-out studies and set statewide virtual school tuition rates in alignment with the actual costs of operating virtual schools.
- Create programs in state education departments that oversee virtual school operations, allowing for implementation and oversight of the preceding recommendations.

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- 6 Virtual charter schools are a common type of virtual schools that emerged from charter school policy and operate outside of the traditional brick-and-mortar public school system. Many virtual schools run out of school districts and some out of private schools. This review considers all types of virtual schools where appropriate.
- 7 The term “disruptive innovation” and related terms linked to the word “disrupt” are commonly deployed in the business and technology fields with an assumption that disruptive practices are inherently positive and worth pursuing. The goal of these fields is to seek disruption, particularly in education because the business and technology-minded individuals using the term tend to claim the status quo of public education is broken. While this section of the report attempts to denote positive and negative connotations of disruption and use this term in framing why virtual schools have run amiss, it is important to note that the assumption of disruption being inherently positive is highly problematic. Of course, sometimes disruptions to the status quo produce benefits to society, but other times disruptions corrupt or destroy practices in ways that harm the public good. While this report does not venture into the realm of delineating the connotation of the word “disruption” and uses the term in as value-neutral manner as possible, it is recommended others tread carefully when deploying the word disruption in conversations about education reform.
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