CASTLE BRIEF No. 2

A virtual shortfall: How full-time online learning models are not living up to the promise

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As a part of the National Education Policy Center’s (NEPC’s) annual *Virtual Schooling in the United States* report, the authors reported that their “legislative analysis revealed an increase in state bills proposing task forces and oversight boards charged with overseeing the implementation challenges raised by virtual schools” (Molnar et al., 2017, p. 78). In fact, there were 17 different states that introduced a total of 20 different bills during the 2015 and 2016 legislative sessions. However, the authors also reported that “despite increased attempts to improve oversight and accountability of virtual schools by identifying funding, governance and accountability mechanisms that would allow better control, such improvements continue to challenge policymakers and practitioners” (p. 78), as only five of those 20 bills were enacted. This analysis came in tandem with a report from the National Alliance for Public Charter Schools, the 50-State Campaign for Achievement Now, and the National Association of Charter School Authorizers (2016) – all organizations that advocate for charter schools and school choice policies, where the authors stated:

*The well-documented, disturbingly low performance by too many full-time [online and blended learning] schools should serve as a call to action to state leaders and authorizers across the country. It is time for state leaders to make the tough policy changes necessary to ensure that this model works more effectively than it currently does for the students it serves. It is also time for authorizers to close chronically low-performing virtual charter public schools.* (p. 2)

Despite continued calls for additional oversight or a moratorium on the growth of virtual charter schools, a surge of new full-time virtual schools continue to enter the marketplace; their entry and growth comes in large part due to advertising, corporate lobbying, and legislation that favors a landscape of school choice policy with limited restrictions. Virtual charter schools continue to lag behind traditional brick and mortar schools when it comes to student outcomes. In fact, student performance metrics across varying indicators used by different states still indicate a lack of performance in full-time virtual environments even as online schools chose more flexible instruments to measure outcomes instead of annual yearly progress (AYP). This new educational delivery model is dominated by business leaders, school reform organizations, foundations (such as the Bill & Melinda Gates Foundation and the Walton Family Foundation), and for-profit and non-profit educational service
providers, and has become a neo-liberal push to revolutionize teaching and learning. While an educational revolution may sound like a great idea, the issue here is that the programs pushed by the previously mentioned stakeholders have grown despite continual and mounting evidence of inadequate school academic and nonacademic outcomes, as well as concerns regarding diversity and equity.

Advocates and operators of virtual charter schools often contest the research evidence that prompted the above mentioned claims from the NEPC and charter school organizations, or focus on a selective minority of methodologically convenient research in their own defense. The purpose of this research brief is to provide overview of the research focused on student performance in full-time virtual schooling environments, pointing out bias and weighing all the evidence about the effectiveness of virtual schools. In the following sections, we describe each piece of research based on the type of literature it is, who wrote and/or produced the research, and the nature of any funding provided to conduct that research. We also examine what each piece of research found in relation to student performance and the basis for those findings. As a part of this review, we attempt to outline possible methodological decisions that may potentially skew the data or warrant caution in interpreting the results. The brief is organized with research that is multi-state or has a national focus first, followed by research on a state-by-state basis in alphabetical and then chronological order. The goal is to provide the reader a complete understanding of the research on the performance of students enrolled in full-time virtual schools.

NATIONAL EXAMINATIONS


This report was published by the Rand Corporation (2018) and sponsored in part by the Bill and Melinda Gates Foundation, the Joyce Foundation, and the William Penn Foundation. The Rand Corporation is a think tank that aims to produce objective research without political lean, though its politics and recommendations tend to favor liberal policies. The three philanthropic
foundations have all at some point funded growth or represented views that favor expansion of charter schools, though their stance on virtual charter schools has been less clear. This report examines charter schools in eight states, and as a part of that analysis the authors also referenced virtual charter schools in the three of the eight states—California, Ohio, and Pennsylvania. Unfortunately, they focus their analysis of virtual charter school achievement on schools in Ohio because of a lack of data in the other two jurisdictions.

According to the authors, the influx of new virtual charter schools was met with a high degree of suspicion both in regards to financial oversight and academic performance. Despite this suspicion, data in Ohio show that 22% of charter school enrollment was in virtual charter schools in the 2008-2009 school year. Using a student fixed-effect achievement analysis of these Ohio virtual charter schools, the authors show that virtual charter schools had “negative, substantial, and (in three of four estimates) statistically significant” outcomes when compared to traditional charter schools (p. 40). The authors warned to use caution in interpretation of these findings, partially because stayers—or students who began in virtual charter schools in Kindergarten—reported higher achievement gains than switchers. The switchers may have already been distressed within the traditional public school environment (i.e., the reason they may have switched to a virtual charter school in the first place). While urging caution in interpretation, the authors still stated that, “the size of the estimated achievement declines for enrolled students nonetheless merits concern” (p. 41).


This report was prepared by the National Education Policy Center (NEPC) at the University of Colorado Boulder. Using publicly available federal and state data, the NEPC examined K12, Inc. schools’ finance and student characteristics and performance. K12, Inc. was selected because it was the largest private educational organization and “the dominant player in the operation and expansion of full-time virtual schools” (p. ii). While there are no specific funders listed for this report, the NEPC indicates that it received donations from, among others, the Ford
Foundation, the Great Lakes Center for Education Research and Practice, the National Education Association, the Atlantic Philanthropies, and the American Federation of Teachers.

The overwhelming majority (i.e., 75.1%) of students who enrolled in fully-managed K12, Inc. schools were White—considerably more than state averages for the states where the students were enrolled (i.e., 54.7%). At the same time, a considerably smaller percentage of K12, Inc. students qualified for free-or-reduced lunch or were English language learners compared to other students in the state (i.e., 39.9% vs. 47.2 and 0.3% vs. 13.8% respectively). Although K12, Inc. schools served a similar percentage of students who qualified for special education as their host state averages (i.e., 9.4% compared to 11.5%), the authors pointed to previous research that found full-time online schools similar in scope and instructional format to K12, Inc. served students with more severe disabilities. Of more concern to the authors was the performance of K12, Inc managed schools. In 2010-2011, only 27.7% of K12, Inc. full-time virtual charters met Adequate Yearly Progress (AYP). Of the 48 full-time virtual schools operated by K12, Inc., 36 were assigned performance ratings with only seven (i.e., 19.4%) earning a status of satisfactory progress. Of additional concern was the mean performance on state math and reading assessments. The performance of K12, Inc. full-time virtual schools students consistently lagged behind the performance levels of the states from which K12, Inc. drew their pool of students. In math, full-time virtual students scored 14% to 36% lower than other students in their respective states, with the gap increasing exponentially in the upper grades. The on-time graduation rate also showed a major discrepancy with 49.1% of K12, Inc.’s full-time virtual charter students graduating on time, compared to 79.4% in the states in which K12, Inc. operated.


The NEPC has published annual reports on full-time virtual schools since 2013. All of the annual reports are funded by the Great Lakes Center for Education Research and Practice, whose stated mission is to “support and disseminate high quality research and reviews of research for the purpose of informing education policy and to develop research-based resources for use by those who advocate for education reform” (Great Lakes Center for Education Research and Practice, 2017, ¶ 1). The Great Lakes Center is also described as an independent, non-profit organization supported by education stakeholders, which include the National Educational Association. Since the first in this series of reports was released in 2013, virtual education has continued to expand, despite recommendations to the contrary.

In 2013, NEPC analyzed data from 311 full time virtual schools operating in the United States. Using AYP as an indicator for both academic and nonacademic outcomes in the 2010-2011 school year, they found that 52% of brick-and-mortar district and charter schools met AYP, contrasted with 23.6% of virtual schools—a 28% gap. The annual reports that have followed the inaugural report have consistently reported continued problems in full-time virtual schools—especially in the areas of education quality, diversity, accountability, and funding. The authors found that three of every four full-time virtual students were White. These full-time cyber-charters also served a lower percentage of low-income students, English language learners, and students
with disabilities. Even with a population of students that tend to correlate with higher levels of academic achievement, the authors reported that among all measures of school performance, including AYP, full-time virtual schools fell significantly below performance levels of traditional, brick and mortar institutions.


The Center for Research on Educational Outcomes (CREDO) conducts quantitative assessments of school performance across the United States. CREDO is run out of Stanford University and, at times, collaborates with other organizations in their analyses. The 2015 Online Charter School Study was co-conducted by Mathematica Policy Research and the Center on Reinventing Public Education. The former being a non-partisan research company and the latter being an organization that tends to support educational reform policies that include charter schooling. CREDO funders include the Bill & Melinda Gates Foundation, Carnegie Corporation of New York, Laura and John Arnold Foundation, Michael and Susan Dell Foundation, US Department of Education, and the Walton Family Foundation. This particular study was funded in part by the Walton Family Foundation (2015), who describe themselves as an organization that “envisions a future where every child has access to... educational choices” (¶ 2).

The 2015 study examined virtual charter schools from 17 states and the District of Columbia and used a statistical matching strategy that identified “statistical twins,” meaning they match students in virtual charter schools to students in traditional schools based on demographic traits and prior achievement. In addition to achievement outcomes, the authors looked at school traits and state-level policies to see if they affected the achievement growth of virtual charter students; as well as other outcomes such as student mobility. This study found that the virtual charter students had lower growth than matched students and this finding was consistent across state-level contexts. There were a few instances where they found some growth in certain virtual charter schools depending on a few school-level traits. This report showed that in general, with few exceptions, virtual charter schools had been associated with much lower learning growth for virtual charter school students compared to peers in traditional settings.
in the year they examined. However, while matching techniques such as those used in this report are more precise than typical regression techniques, they match on demographic and individual traits that inherently do not include the reason for choosing an alternative to the traditional brick-and-mortar school. This means that despite being more precise than many other studies, these findings can still not be understood as being causal. Additionally, in this report, the “days of learning” metric is an attempt to frame quantitative findings to a public audience and is an alternate way reporting standard deviations and has been criticized as a misleading explanation of findings (e.g., Maul & McClelland, 2013).

ARIZONA


The Technology Assisted Project-Based Instruction (TAPBI) Program was a pilot program in Arizona. Established by the legislature in 1998, its purpose was to “improve pupil achievement and extend academic options beyond the four walls of the traditional classroom” (p. i), which allowed schools to create both supplemental and full-time online learning programs. This report was written by the Arizona Office of the Auditor General, which conducted a performance audit of the TAPBI Program to examine “whether TAPBI schools are appropriately applying state enrollment and funding requirements, how their costs compare to traditional brick-and-mortar schools, and what efforts they are taking to ensure student achievement” (p. i).

The report indicated that errors and noncompliance in the reporting of student attendance resulted in an overfunding of $6.4 million for TAPBI Program schools. The report also indicated that TAPBI schools’ operations cost less, and that additional savings might exist. Finally, the report was unable to determine the TAPBI Program’s overall effect on student achievement. It stated that based on limited data “students in the TAPBI schools generally tested at or below the state averages” (p. 28). However, it cautioned readers that “the current practice of comparing TAPBI students’ standardized test scores to scores of other students is not a reliable
way to assess the program since many TAPBI students attend both online and brick-and-mortar schools” (p. 27).


This reporting was a six-day series that included 28 published items ranging from traditional news articles to in-depth profiles to raw data presented in graphical format that was undertaken by reporters from *The Arizona Republic*. In their reporting, the journalists indicated that they conducted “an analysis of hundreds of pages of state and school documents... and dozens of interviews with experts and school leaders” to provide the information for this investigative series (¶ 38).

In terms of student performance, the journalists indicated that, “in 2009-10 had nearly 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. Two beat the average in AIMS reading in 2011” (¶ 24). One of the reasons for this poor performance may be that two of the largest online schools reported a substantial proportions of students who finished a semester-long course in just 20 hours, and even more students suggesting that they had completed the same courses in less than 40 hours (as opposed to the normal 60 hours or more than the average brick-and-mortar student spends in a semester-long course, not including work at home). Finally, while there was no statewide data available, the reporters indicated that the online schools they interviewed had reported that between 25% and 40% of their students withdrew or dropped out of their online school. This high rate of students that withdrew or had dropped out of their online school likely increased the online school’s student performance, as these students would likely have been lower performing students.

**ARKANSAS**

This report was conducted by members of the Department of Education Reform at the University of Arkansas and was an internal evaluation of the Arkansas Virtual Academy (ARVA) charter school. The Department of Education Reform at the University of Arkansas was created through a gift from the Walton Family Foundation to, among other things, “conduct research on charter schools, voucher programs and other policies the foundation supports” (Rich, 2014, ¶ 14). This particular study was conducted on behalf of K12, Inc. as a part of their charter renewal process for the Arkansas Virtual Academy to the Arkansas Department of Education.

The report sought to determine the learning gains of third to sixth grade students (ending then two years later in fifth to eighth grade) compared to a set of matched students from traditional public schools (two matched students for every virtual school student). These students were statistically matched on variables that reflect a student’s grade, school district, socioeconomic status, race, and gender. In addition, the others placed heavier weight on matching students in the virtual school to prior school achievement because prior achievement is a high predictor of future achievement. Despite these matches, the sample of ARVA students studied was more affluent and with fewer minority students than the comparison group. The authors found that students enrolled for two years in the virtual academy tended to score higher on both math and reading than the students that they were matched to in the traditional public school. The achievement difference was especially pronounced in grade six math and grade four literacy. The authors found no statistically negative effects across age cohorts. However, the selection of students who enrolled in the school and did not repeat grades (eliminating the lowest performers from the sample), as well as the difference in demographics, suggest these results should be taken with caution. Finally, there are selection bias concerns with matching techniques as mentioned above due to the selectivity of those who elect to enroll in full-time virtual schooling.


This study was published in the *Journal of Online*
The study used a propensity score matching technique to examine the growth of math and literacy of students in a K-8 virtual charter school. The school had an enrollment cap and used a lottery if the school was oversubscribed. However, the strategy of the study itself was to focus only on enrolled students and statistically matched peers in traditional public schools. The students were matched based on previous test scores, race, gender, and individual education plan status. Using the matched sample, the authors analyzed longitudinal, value-added growth for students in the virtual charter school compared to their matched peers. The authors found that students score much lower in their first year of enrollment in the virtual charter school in general, though, for the students who remain in the program, performance turned neutral and even positive for certain subgroups. This evidence suggests that in this virtual charter school setting, students who initially enrolled performed lower, but those who remain enrolled tended to grow at least to the academic levels of matched peers. The authors of the report attribute the results to a first-year dip in performance or program improvement, though a number of other factors may contribute to their findings. For example, they may be observing low-performing students leaving or being pushed out of the online school. As mentioned above, the concerns with student selectivity with respect to the matching techniques also limit the findings.

COLORADO

This report was prepared on behalf the State Auditor, which is a non-partisan body that has the authority to conduct audits of any department, institution, and/or agency in the state government (including publicly funded schools). In this instance, the auditor conducted a performance audit of K-12 online education in Colorado. The auditor:

- reviewed documentation and interviewed personnel in the Department of Education;
- visited a sample of online schools; analyzed academic performance and funding data for Fiscal Years 2003 through 2006; and surveyed parents and students. Our audit included a sample of 12 online schools with over 6,100 enrolled students and $32.5 million in funding in Fiscal Year 2006. The schools we reviewed represented 99 percent of all students enrolled in online schools and 99 percent of the associated funding for the Year. (p. 1)

Typical of most state audits, the State Auditor works within the structure of government, so the data they access tends to be more complete than what is provided to external researchers or investigative journalists.

The audit found that “online [standardized test] scores in math, reading, and writing had been lower than scores for students statewide over the previous three years” (p. 24). Further, “the differences in performance between online students and all students statewide were larger in higher grades” (p. 27). In addition, the audit found that “on average, online students [standardized test] performance decreased over the three-year period reviewed” (p. 27). Finally, “the online repeater rate was substantially higher than the statewide rate” (p. 29), “the attrition rate for the seventh through twelfth grade students was almost three times higher than for students statewide in 2003-04 and almost four times higher in 2004-05” (p. 30), and “online schools had an aggregate drop-out rate that was about three times higher than the statewide rate in 2003-04 and more than six times higher in 2004-05” (p. 30). The auditor concluded that, “the Department [did] not use the accreditation process effectively to improve the quality of education” (p. 2). This means that the auditor found evidence that in more than half of the online schools examined, that the Colorado Department of Education knew the schools were performing poorly, but failed to take any action (e.g., placing the school on accreditation probation). In fact, the auditor found such
significant problems with the oversight of one of these online schools that two of the four-page summary was focused upon this single school.


Beginning in 2009, there was a statutory requirement that an annual report be prepared by the Unit of Online Learning within the Colorado Department of Education and submitted to the State Board and the Education Committees of the House of Representatives and the Senate. The purpose of these annual reports was (and still is) to provide information on the activities and structure of single district and multi-district online programs for the previous school year. During the 2011-12 legislative session, this requirement was amended so that the Office of Blended and Online Learning within the Colorado Department of Education was required to prepare a summary report to be submitted in 2014 to the same bodies and every five years thereafter. This revised requirement called for “an examination of data focusing on online school performance in comparison to state averages, enrollment trends, accountability ratings of online schools and post-secondary workforce readiness” (p. 3). In each of these reports, the data examined was based on information collected by various Colorado
Department of Education bodies for any online school that had a school code.

In the first of these annual reports that was released in 2009, the authors wrote that it was evident that Colorado’s online schools were “demonstrating a sincere commitment to student learning and a consistent effort to increase student achievement. It [was] also evident, however, that some programs [were] falling short of the mark” (p. 3). The authors reported in the following year that “the non-completion rate [was] high in online programs” (p. 3), “the average scores for online programs continue to be below the state average” (p. 4), and while this school year “saw improvements in student success in many of Colorado’s online programs… most were still behind the state average” (p. 9). The final annual report in 2011 concluded that, “online students consistently lag behind those of non-online students, even after controlling for grade levels and [almost every individual] student characteristic” (p. 6). The next report in this series was not until three years later, in 2014. However, the conclusions the authors reached continued to be consistent – that “online school performance on state assessments had been lower across all grade levels and content areas than that of its brick and mortar counterparts” (p. 3).

The next report in this series is scheduled to be released in 2019.


This item was a three-part series that was undertaken by reporters from the I-News Network (i.e., a Colorado-based “in-depth news consortium”) and Education News Colorado (i.e., a non-profit organization that was, at the time, associated with Public Education and Business Coalition – a Denver-based education non-profit organization). The investigative journalists that were assigned to this study spent 10 months analyzing “previously unreleased Colorado Department of Education data” from the 2009-10 and 2010-11 school years.

Based on their analysis, the reporters explained:

- “Half the online students wind up leaving within a year. When they do, they’re often further behind academically than when they started.”
• Online schools produce three times as many dropouts as they do graduates. One of every eight online students drops out of school permanently—a rate four times the state average.
• Millions of dollars are going to virtual schools for students who no longer attend online classes.
• The churn of students in and out of online schools is putting pressure on brick-and-mortar schools, which then must find money in their budgets to educate students who come from online schools mid-year.” (¶ 10)

More specifically, they reported that the largest online schools – representing approximately 90% of the online students in the state – enrolled approximately 10,500 students at the beginning of the 2009-10 school year, but by the end of Fall 2009 about 5,600 of these students had left their online school. These students were replaced by an additional 7,400 new recruits. At the end of the school year a third of these new recruits had left their online school. This means that only a quarter of these students stayed with the same online program during the two-year period. While 59% of these online students scored proficient or above on statewide exams while attending a brick-and-mortar school the year before, this figure dropped to 51% for these same students after a year of attending an online school. The reporters also found that “in Colorado’s online schools, dropouts outnumbered graduates by three to one” (¶ 19). Finally, unlike claims made by officials from many of these virtual schools when they were asked to comment on the story, only a small percentage of these online students were previously dropouts, attended an alternative school during the prior school year, or were even considered as struggling based on the state standardized reading tests.

IDAHO


The Idaho State Department of Education commissioned Education Northwest to conduct a report to understand the enrollment characteristics and achievement outcomes of virtual charter school students compared to other charter school and non-charter public school
students. Education Northwest is a research and evaluation organization that is a part of the national Regional Education Laboratories (REL) program under the US Department of Education’s Institute of Education Sciences. According to its website, Education Northwest’s (n.d.) purpose is “to build the region’s capacity to use data and research to address problems of practice in education” (¶ 1). It works with the other nine RELs across the country “to build a national knowledge base of reliable, actionable evidence to help improve student outcomes” (¶ 1).

The enrollment portion of the study showed that virtual charter schools tended to have more White students compared to public non-charter schools (i.e., 86.4% to 80.9%) and higher levels of free and reduced lunch students (i.e., 53.3% to 43.9%). The brick-and-mortar charter school students tended to have more White and lower free and reduced lunch students than both non-charter and virtual charter schools. The achievement portion of the study showed that proficiency rates for students in virtual charter schools tended to be lower than rates in other charter schools and non-charter schools. From 2004-2009, the proficiency rates in math and language arts for virtual charter students were consistently lower at a statistically significant level; and statistically lower for reading in 2005, 2006, and 2009. The researchers also conducted a more detailed analysis using a strategy to match students along background characteristics and compare the performance of these similar groups of students. When using this matching strategy, the study found that in all factors tested, students in virtual charter schools scored at statistically significant lower rates. However, the concerns with matching techniques here mirror those mentioned earlier (i.e., that the matching occurs on key demographic characteristics but still can not account for the differences between choosers of the school and non-choosers).

KANSAS


These two reports were prepared by the bipartisan Legislative Post Audit Committee in Kansas. The purpose of the reports was to analyze the enrollment, costs, and performance in the state’s virtual schools. The first report was published in 2007 and the second report in 2015. The auditors determined that there were 28 virtual schools in 2005-6 with about 2000 students. By 2013-14, this had expanded to 48 virtual schools operated mostly by school districts (n=37), but also some by service centers (n=six) and some by private vendors (n=five). There were about 6,400 students enrolled in these virtual programs by 2013-14, ranging from full-time K-12 students to adult students in programs for credit recovery so they could earn their degree.

According to the first audit, during the 2005-6 school year, there was a lower percentage of virtual students meeting state standards on statewide math assessments across all grade levels compared to the state averages in all schools (i.e., 56% to 79% in elementary school, 64% to 69% in middle school, and 37% to 58% in high school). In reading, the scores were more closely aligned (i.e., 72% to 78% in elementary school and 71% to 77% in high school in favor of brick-and-mortar schools, while 86% to 79% in middle school in favor of virtual school students). However, the report warns that the assessments were limited due to data accessibility issues. For example, there were approximately 700 assessments in the virtual school cohort compared to over 466,000 in the brick-and-mortar cohort.

The second audit used data from the 2012-13 school year to suggest that the students in virtual schools performed at about the same levels of students in traditional schools. The students in virtual schools scored lower on math tests with a median of 70% compared to 77% in traditional schools, and a 67% proficiency rating compared to 79% in traditional schools. These results showed no statistical differences when analyzed with a multivariate regression equation controlling for demographics, but the validity of this finding is difficult to assess because neither the individual demographic factors or the procedural methodology were disclosed in the report. This audit also indicated the state had informed
districts they would no longer receive funding for students who were not proficient on state assessments shortly before the testing period, thus providing a substantial incentive for schools to ensure students in virtual program were only those who would reach proficiency benchmarks.

MINNESOTA


This report was conducted by the Office of the Legislative Auditor for the State of Minnesota evaluating the current status of K-12 online learning in the state. With approval from the Minnesota Department of Education, any school district, intermediate school district, charter school or consortium of school districts can establish an online school and be reimbursed for course taken by students from across the state of Minnesota. At the time of the report’s publication, the Department of Education had approved 24 online schools for operation, while only rejecting five applications.

Between the years 2006-07 and 2009-10, the number of students participating in full-time online learning had tripled. However, since 2006-07, these full-time online students had become less likely to finish the courses they began and more likely to drop out of school—18% dropped out in their twelfth grade year in 2006-07 and 25% dropped out in 2009-10. This drop out rate is 15 percentage points higher compared to traditional public school counterparts whose attrition rate was only 3% statewide. These full-time online students also made less progress on the statewide, standardized math test than did their traditional public school counterparts. These lower scores came despite that many lower performing students had already dropped out prior to end of course testing.

OHIO


This report was conducted by the Ohio Alliance for Public Charter Schools, self-described as
a “non-profit, non-partisan and independent membership organization dedicated to the enhancement and sustainability of quality charter schools” (p. 2). This report came as a response to Ohio Governor Ted Strickland’s recommendation that virtual charter school funding be reduced disproportionately more than other types of schools, as well as in reaction to a critical report by the RAND Corporation (see earlier Zimmer, Gill, Booker, Lavertu, Sass, & Witte, 2009 report in the ‘National’ section). This report used data released by the Ohio Department of Education to compare virtual charter schools in the state of Ohio to that of ‘Ohio’s Big 8 urban districts.’ The Big 8 urban districts were selected because they have similar student populations to virtual charter schools in that they both “serve students with extremely low” performance on standardized tests (p. 2). For instance, students entering a virtual charter school had previously scored in the 33rd and 22nd percentile in reading and math respectively, and students entering into the Big 8 urban districts had previously scored in the 26th and 25th percentiles in reading and math respectively.

The key findings on academic outcomes in the study were that these “e-schools” (as they called them), when compared to the Big 8 urban districts, performed higher on the state’s value-added performance design. Of the seven e-schools, five performed at meeting expectations or above, while the Big 8 schools only had two of their schools hit this benchmark. The authors used this report to make bold statements like ‘superior results’ and ‘confirmed growth.’ However, virtual charter schools had a much higher mobility rate (49%) than the Big 8 urban districts (20%) and other brick-and-mortar school districts in the state (10%). The report inferred that the higher mobility rate was the result of factors such as “military or mission work, flexibility requirements to allow for chronic health or required work circumstances, teenage pregnancies, among others” (p. 3). This mobility also impacts the results of this study, as it suggests that the virtual charter school results are based on a more selective group of students. As such, it is not clear if the comparison group of the Big 8 urban districts is valid when considering the end-of-year sample left taking these tests in an e-school.

This report presents graduation rates and funding allocations to advance the argument that the sector is not serving the citizens of the state. Innovation Ohio is a statewide think tank that publishes on a range of public policy issues. The organization’s reports and studies tend to reflect a progressive or liberal political ideology. The report used public data from the Ohio Department of Education and focused on what the authors called “e-schools... a subset of charter schools” (p. 1).

The report stated that only three out of the 23 schools were rated ‘effective’ or better on statewide report card measures. The report also explained that only two out of the seven statewide e-schools had graduation rates higher than the lowest traditional public school district in the state. Further, nearly 97% of Ohio’s traditional public districts had a higher average score on Ohio’s Performance Index Score rating than the average score of the seven statewide e-schools. The report used these metrics of quality to argue that the state spent too much money on the sector, arguing that “e-schools receive enough state money to pay for a class size ratio of 15:1” (p. 7), but in actuality the average class size ratio was 37:1 students per teacher.


The report, Enrollment and Achievement in Ohio’s Virtual Schools, and the journal article, Student Enrollment Patterns and Achievement in Ohio’s Online Charter Schools, were both written by June Ahn from New York University. The article also included Andrew McEachin from the RAND corporation. The report was funded by the Thomas B. Fordham Institute, which tends to publish items reflecting a conservative ideology and the Institute generally favors implementation of school choice initiatives and charter schools. The article itself did not mention funding affiliation. However, the article and the report had the same author and cover the same topics about enrollment and achievement in Ohio’s e-schools.
during the same time period.

The purpose of both the report and the article was to understand the demographics and achievement of students entering e-schools, which they defined in the article as virtual charter schools in which “students typically opt out of their local school district and enroll in an e-school and have fully online learning experience” (p. 45). The authors wrote in both publications that students in Ohio’s e-schools tended to have higher levels of White students compared to state averages. These students tended to have lower baseline achievement levels, be more likely to qualify for free and reduced price lunch, and be less likely to have participated in gifted education. The authors used a statistical matching strategy to show that when compared to matched peers in traditional public and traditional charter schools, the students who started e-schools in the lower baseline academic distribution scored lower on state testing and had lower likelihoods of meeting high school graduation standards. Students with prior levels of high achievement also scored lower than their traditional public and charter school peers, but the difference was not as stark as those with lower prior levels of academic achievement. Also, students in the higher baseline academic distribution were equally likely to meet high school benchmarks compared to traditional public and charter school peers. However, students in all subgroups in e-schools, whether meeting benchmarks or not, tended to have worse comparative performance than peers with similar achievement in the traditional setting. Again, readers are cautioned about making any causal conclusions due to the matching techniques discussed earlier.

**Pennsylvania**


As mentioned in describing the 2015 national study from CREDO, the organization is run out of Stanford University and conducts quantitative assessments of school performance across the United States. It is also important to remind readers that many of the foundations that fund CREDO have been described by some as pushing the “charter school movement away from education quality in favor of a strategy focused only on growth” (In The Public Interest and the American Federation of Teachers, 2015, ¶ 7), and...
the results of their research are often skewed in favor of that agenda. In this report, the authors use a statistical matching strategy that identifies ‘statistical twins,’ meaning they match students in online schools to students in traditional schools based on demographic traits and prior achievement.

The learning growth of students in virtual charter schools in Pennsylvania was much lower in both math and reading when compared to their statistically matched peers in brick and mortar schools. The authors found that from 2007 to 2010 that of the eight virtual charter schools in the study, all eight performed significantly worse than traditional public schools in learning growth in both math and reading when compared to traditional public schools. For example, the authors concluded that, “charter school performance in Pennsylvania lagged in growth compared to traditional public schools” (p. 20). This disparity was greater when only comparing virtual charter school performance to that of traditional public schools. More specifically, when comparing brick-and-mortar charter schools’ reading test scores to that of feeder schools, 34% did significantly worse and 32% did significantly better. Similarly, 38% did significantly worse and 27% did significantly better in math. In contrast, 100% of virtual charter schools performed significantly worse than feeder schools in both reading and math. However, the cautions with the matching strategy utilized in this study, which have been discussed earlier, also apply to this study.

TENNESSEE


This report was conducted by the Tennessee Comptroller of the Treasury’s Office of Research and Education Accountability (OREA). In 2011, the Tennessee General Assembly passed the Virtual Public Schools Act that gave school districts the authority to establish their own full-time virtual schools with the allocation of resources the same as any other public school in the state. Since its inception, nine school districts within Tennessee have established their own full-time virtual school. This report was compiled based on data drawn from a survey that OREA conducted in September and October 2015 of the
administrators for the nine district-established virtual schools. Most of the schools had small enrollments, with more part-time virtual students than full-time virtual students.

Virtual schools were required to submit regular assessments in language arts, math, science, and social studies, and this data was published as part of their state report card. The accountability for virtual schools was amended in 2013, adopting additional measures to ensure student achievement growth in virtual environments. If a virtual school demonstrates growth “significantly below expectations” for three years, the Commissioner of Education can choose to enforce an enrollment cap or to close the school. Virtual schools must also submit to the Tennessee Value-Added Assessment System (TVAAS) that measures the impact schools and teachers have on student growth rather than proficiency on the state assessment. The report provided the TVAAS composite score for the five virtual schools in which it was available. Three of the five virtual schools received a ‘significantly below expectations’ rating, with one virtual school receiving a ‘below expectations’ rating and another virtual school receiving an ‘at expectations’ rating. All five virtual schools scored lower than the local districts that established the virtual school. The report suggested that the low scores may be due to the high mobility and attrition rates, but beyond the fact that these virtual schools had high levels of student mobility and high attrition rates there was no evidence that this was a factor. The results indicated that there was no evidence that the mobility and attrition did not remove traditionally lower-performing students, which would have actually improved the virtual schools composite scores.

WISCONSIN


This report came from the Wisconsin Legislative Audit Bureau, which is a non-partisan agency that is tasked with auditing state run agencies and programs. The impetus for this report was the legislature promised to evaluate the virtual charter schools in the state to ensure appropriate oversight and compliance. The audit focused on the growth and development of virtual charter schools from 2002 to 2008,
and detailed enrollment trends, operations and attendance, teaching, funding, and achievement. As Wisconsin virtual charter schools grew from a few hundred students (n=261) in 2002 to a few thousand (n=2,951) in 2008, the report focused on whether this growth corresponded with a variety of achievement metrics.

According to the end-of-term test scores in reading and math, the virtual school students tended to have a higher median score than public schools in reading and slightly lower median score in math. The virtual charters also offered comparable end-of-term proficiency ratings in math and reading to public schools, while parents and students rated the schools highly in a satisfaction survey conducted by the auditors. However, the use of end-of-term testing removed students that had dropped out or withdrawn from their virtual charter school—suggesting that the virtual charter school sample was a more selective group of students. Further, the authors were unable to compare virtual charter school students to brick-and-mortar public school students with similar backgrounds, limiting the conclusions that can be made regarding student performance. While the study does not present growth of students or any type of value-added design, the findings the auditors present suggested that the virtual charter schools in Wisconsin were performing about on par with the state’s traditional public schools. However, that the auditors also reported that virtual charter schools also proportionately underserved minorities (11.9%) and special education populations (3.3%) as compared to their public school counterparts (23.1% minority and 14.2% special education).

**SUMMARY AND RECOMMENDATIONS**

The majority of the studies show that policymakers and scholars need to wrestle with major questions about the nature of full-time virtual schooling as it is currently implemented in the United States. While there are limitations to relying solely on quantitative performance indicators when assessing the efficacy of a single school or sector of schools in a single study, the use of these data become more convincing when considering the fact that the overwhelming majority of evidence and number of studies show that full-time virtual schools have substantially lower performance ratings with populations of students that tend to perform higher in other settings. In a sense, these quantitative measures may not always be able to tell us what steps to take to make a school work well (e.g., high
performance measures may not always indicate a school is great), but they are useful in raising flags of caution to indicate concern over an entire sector. The evidence here suggests we should be concerned.

Of course, full-time virtual schools inherently serve students who, through their selection of an online program, indicate that something is not working for them in a traditional public school setting. The reasons for this choice also tend not to be able to be captured in statistical modeling. These factors provide a need for researchers and policymakers to understand why students leave traditional settings and consider what steps must be taken in order to ensure that this unique population of students thrive in whatever alternate environment suits their unique needs. This reality means there is still much to learn about full-time virtual schooling in the United States as there are assuredly schools more apt to serve this unique population of students than others, alternate enrollment strategies that provide an appropriate match between students and program, and generally how to design policy and systems that incorporate full-time virtual schools in a way that enhance the array public schooling options for students. To achieve these goals, policymakers need to take bold steps.

Indeed, some action is beginning to happen to solve these issues, albeit they are not happening for performance reasons. For example, in January 2018, the Electronic Classroom of Tomorrow, the largest virtual charter school in Ohio and one of the largest in the country, was closed by the Ohio Department of Education (Henry & Candisky, 2018). Even though the online school was regularly rated as a failing school by the state, it was inflating student enrollment figures, causing an overpayment of state aid, and the subsequent repayment of that money that forced the school to close. Closing the school took years despite the fact that enrollment inflation was a common practice for the online school that had dated back to the school’s first and second year of operation (Candisky & Siegel, 2017). The unfortunate reality is that – even with the high dropout rates, poor retention figures, and lack of achievement on statewide assessments – virtual charter schools are rarely closed due to poor student performance. The situation has become so shockingly out of step with the closure of traditional public schools, or even brick-and-mortar charter schools, that even the organizations like the National Alliance for Public Charter Schools, 50-State Campaign for Achievement Now, and National Association of Charter School Authorizers. (2016) –
organizations devoted to the advocacy of charter schooling and school choice options – called for a moratorium on new virtual charter schools.

These recent calls for a moratorium on the establishment of virtual charter schools until better regulatory measures are enacted that allow for the oversight and, if necessary, closure of some of these programs are not new. The legislative audits almost a decade ago in jurisdictions such as Arizona, Colorado, and others made similar calls. However, a decade later and there no jurisdictions that have a comprehensive regulatory regime for virtual charter schools (Barbour, Clark, DeBruler, & Bruno, 2014). As was the case in Ohio with the Electronic Classroom of Tomorrow, which donated approximately $2.1 million to candidates and campaigns over the past two decades (Editorial Board, 2018; Schladen & Siegel, 2018), often times the lobbying, political donations, and relationships between legislators and advocacy groups on behalf of the corporations behind virtual charter schools prevent meaningful oversight (Barbour, 2017; Kamenetz, 2018; Woodward, 2012).

Given these realities, and based on the evidence provided in this brief, we recommend that governments at the federal, state, and local levels begin to consider comprehensive reform regarding full-time virtual schools. It is time to consider school finance and quality when considering these reforms. Specifically, we suggest:

- State governments should consider strategies beyond closure due to financial impropriety when regulating full-time virtual schools. This includes ensuring that schools adhere to the mission of their program (or their charter if they a charter schools) and are assessed based on measures of quality that extend beyond if they are able to maintain enrollment figures. These measures of quality need not necessarily be test-based or end-of-course program outcomes, but they should be rooted in academic knowledge on effective teaching and learning in online environments.

- Policymakers should enact legislation that removes increasing enrollment as the primary organizational incentive of an online school. This could mean capping the growth of programs, tying funding to performance, or funding schools in a way that they are not rewarded simply for adding students. Relatedly, rewards of profit should
be removed from the sector, as increasing efficient revenues often misaligns with the nature of deliberately using one’s time to teach, develop, and mentor students. There are examples of higher performing online schools in the United States, these programs should be replicated while the inadequate programs are removed.

• Policymakers and researchers should increase capacity for assessing and analyzing online schools. As it stands, the majority of the studies collated for this report show single time point studies that are largely quantitative in nature. While these studies are useful in providing insight into some of the challenges facing the sector, more qualitative research and in-person evaluations are needed to understand the nature of the students who select full-time virtual schools and why so often these schools are not providing the tools for these students to succeed academically.

• Finally, scholars and researchers need to continue to provide pressure and accurate information to policymakers. Many decisions are made about the sector because of lobbying from some of the largest vested interest groups who spend money to ensure the sector will grow. Policymakers need to face pressure to make decisions based on empirical and less biased evidence.
REFERENCES


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