



UNDERSTANDING AND IMPROVING FULL-TIME VIRTUAL SCHOOLS

A STUDY OF STUDENT CHARACTERISTICS,
SCHOOL FINANCE, AND SCHOOL PERFORMANCE
IN SCHOOLS OPERATED BY K12 INC.

Gary Miron and Jessica L. Urschel

Evaluation, Planning, and Policy Analysis
and Western Michigan University

July 2012

National Education Policy Center

School of Education, University of Colorado Boulder
Boulder, CO 80309-0249
Telephone: (802) 383-0058

Email: NEPC@colorado.edu
<http://nepc.colorado.edu>



Kevin Welner

Project Director

William Mathis

Managing Director

Erik Gunn

Managing Editor

Briefs published by the National Education Policy Center (NEPC) are blind peer-reviewed by members of the Editorial Review Board. Visit <http://nepc.colorado.edu> to find all of these briefs. For information on the editorial board and its members, visit: <http://nepc.colorado.edu/editorial-board>.

Publishing Director: **Alex Molnar**

Suggested Citation:

Miron, G. & Urschel, J.L. (2012). *Understanding and Improving Full-Time Virtual Schools: A Study of Student Characteristics, School Finance, and School Performance in Schools Operated by K12 Inc.* Boulder, CO: National Education Policy Center. Retrieved [date] from <http://nepc.colorado.edu/publication/understanding-improving-virtual>.

This material is provided free of cost to NEPC's readers, who may make non-commercial use of the material as long as NEPC and its author(s) are credited as the source. For inquiries about commercial use, please contact NEPC at nepc@colorado.edu.

Table of Contents

Executive Summary	ii
Introduction and Conceptual Framework	1
Growth and Expansion of Virtual Schools	1
Arguments for and Against Virtual Schools	3
Research Questions Addressed in this Report	8
Methods and Data Sources	8
Limitations.....	9
Student Characteristics	11
Race-Ethnicity.....	11
FRL, Special Education, and English Language Learner Status.....	12
Enrollment by Grade Level	13
Analysis of School Revenues and Expenditures	15
Revenues.....	16
Expenditures.....	18
Cost Advantages and Disadvantages for Full-Time Virtual Schools.....	26
School Performance Data	29
Adequate Yearly Progress and State Ratings Assigned to K12 Schools.....	30
Performance on State Reading and Math Assessments, Grades 3-11	32
Graduation Rates.....	34
Student Attrition.	35
Discussion and Conclusion	36
Answering our Research Questions	36
Possible Explanations for Poor Performance of K12 Schools.....	38
Recommendations for Policymakers	40
Questions for Future Research.....	42
Conclusion	44
List of Appendices (Six appendices containing detailed data are available as a separate document)	46
Notes and References	47

UNDERSTANDING AND IMPROVING FULL-TIME VIRTUAL SCHOOLS

A STUDY OF STUDENT CHARACTERISTICS, SCHOOL FINANCE, AND SCHOOL PERFORMANCE IN SCHOOLS OPERATED BY K12 INC.

*Gary Miron and Jessica L. Urschel
Evaluation, Planning, and Policy Analysis
and Western Michigan University*

Executive Summary

K12 Inc. enrolls more public school students than any other private education management organization in the U.S. Much has been written about K12 Inc. (referred to in this report simply as “K12”) by financial analysts and investigative journalists because it is a large, publicly traded company and is the dominant player in the operation and expansion of full-time virtual schools. This report provides a new perspective on the nation’s largest virtual school provider through a systematic review and analysis of student characteristics, school finance, and school performance of K12-operated schools. Using federal and state data, this report provides a description of the students served by K12 and the public revenues received and spent by the company at the school level. Further, the report presents evidence from a range of school performance measures and strives to understand and explain the overall weak performance of these virtual schools.

Students in K12 schools are more likely to be white and less likely to be Hispanic relative to comparison states. They are also less likely to be low-income and much less likely to be classified as English language learners. In recent years, K12 is increasingly serving more students with disabilities and students it classifies as at-risk, but it still spends relatively little for special education instruction and student support services. Students in schools operated by K12 Inc. and other virtual schools are also more prone to attrition.

K12’s full-time virtual schools receive less public revenue relative to the average for charter schools and district schools. At the same time, however, the company benefits from a number of cost advantages outlined in the report. Weak performance outcomes were found

across an array of school performance measures. Before promoting or even enabling the expansion of full-time virtual schools, more research is needed concerning two key issues: understanding why the performance of full-time virtual schools suffers, and how that performance can be improved. The report offers recommendations to policymakers to revise and strengthen accountability measures and finance mechanisms governing the operation of full-time virtual schools.

Key findings from the study are organized by section of the report and presented in bulleted form below.

Analysis of K12 Student Characteristics

- K12 Inc. virtual schools enroll approximately the same percentages of black students but substantially more white students and fewer Hispanic students relative to public schools in the states in which the company operates. Because K12 schools generally enroll students without regard to school district boundaries, such same-state comparisons are the most useful.
- On average, 39.9% of K12 students qualify for free or reduced-price lunch, compared with 47.2% for the same-state comparison group.
- K12 virtual schools enroll a slightly smaller proportion of students with disabilities than schools in their states and in the nation as a whole (9.4% for K12 schools, 11.5% for same-state comparisons, and 13.1% in the nation).
- Students classified as English language learners are significantly under-represented in K12 schools; on average the K12 schools enroll 0.3% ELL students compared with 13.8% in the same-state comparison group and 9.6% in the nation.
- Most K12 schools serve students from grades Kindergarten to 12; however, K12's enrollment is greatest in the middle school grades. Enrollment decreases sharply for the high school grades.

Analysis of K12 Revenues and Expenditures

Detailed revenue and expenditure data were obtained from the federal dataset on school finance (2008-09). This dataset included information from seven K12 schools located in five states. Those seven schools enrolled 21,866 students in 2008-09, nearly 60% of all students enrolled in all K12-operated schools in that year, according to National Center for Education Statistics (NCES) data. We analyzed K12 revenues and patterns of expenditures and compared them with three groups: (1) brick-and-mortar charter schools in the five states, (2) all public schools in the five states, and (3) all public schools in the country.

Revenues

- During the 2008-09 school year, K12 schools reported receiving an average of \$7,393 in public revenue per pupil, which is less than what charter schools (\$9,258) or district schools (\$11,708) received in the same states. The national average for public revenue per pupil for all public school districts in that same school year was \$12,139.

Expenditures

- K12 schools spend more on overall instructional costs than comparison schools, but noticeably less on teacher salaries and benefits. The data does not provide clear answers to explain this. We assume that this is explained by contracts back to the company for instruction-related costs.
- K12 schools outspend comparison schools on administration but spend substantially less on administrator salaries and benefits. We believe the bulk of the additional spending on administration is accounted for in contracts to the company, although the variables in the federal finance data set do not clearly explain this discrepancy.
- K12 spends little or nothing on such key items as facilities and maintenance, transportation, and food services.
- K12 also spends relatively little for supplemental programs and an array of activities and services that fall under the category of Student Support Services.
- Although K12 enrolls an increasing number of students with disabilities, it spends less than half as much per pupil as charter schools on special education instruction and a third of what districts spend on special education instruction.

Cost advantages and disadvantages

- Full-time virtual schools inherently have a tremendous cost advantage when it comes to facilities, operations, transportation, and food services.
- Based on K12's spending patterns, its full-time virtual schools also benefit from cost advantages by having more students per teacher and by reducing overall spending on teacher salaries and benefits, particularly for special education instruction.
- Full-time virtual schools have to spend more on computers and the development of online curriculum and the development of learning platforms. Also, it is assumed

that these schools need to spend more on marketing and recruitment of students than brick-and-mortar schools, which often have students assigned to them. Beyond this, companies such as K12 spend resources to lobby and advocate for the expansion of online learning across the country, although such expenses are not clearly captured with the established categories and variables in the federal district finance dataset.

- There is a need for more research on the actual costs of educating students in full-time virtual schools. Such research will require companies that operate these schools to be more transparent with their financial data than they have been heretofore.

Analysis of K12 School Performance

- Only 27.7% of K12 schools reported meeting Adequate Yearly Progress (AYP) in 2010-11. This is nearly identical to the overall performance of all private Education Management Organizations that operate full-time virtual schools (27.4%). In the nation as a whole, an estimated 52% of public schools met AYP in 2010-11.
- AYP is a relatively crude indicator of whether or not schools are meeting state standards. Nevertheless, extremely large differences—such as the 25-percentage point difference between the proportion of virtual schools that meet AYP compared with the proportion of brick-and-mortar charter or district schools that do so—warrant further attention. The aforementioned difference in AYP attainment has been constant over the past two years.
- The majority of the K12 schools did not meet AYP because one or more groups of students did not meet state targets on either math or reading assessments (or both). In some cases, K12 schools did not meet the participation target: the requirement that at least 95% of students in a given grade take the state assessments.
- Thirty-six of the 48 full-time virtual schools operated by K12 were assigned school performance ratings by state education authorities in 2010-11, and just seven schools (19.4% of those rated) had ratings that indicated satisfactory progress status.
- The mean performance on state math and reading assessments of K12-operated virtual schools consistently lags behind performance levels of the states from which the schools draw their students.
 - Across grades 3-11, the K12 schools' scores were between two and 11 percentage points below the state average in reading.

- In math, K12 students score, on average, between 14 and 36 percentage points lower than students in their host states, with the gap increasing dramatically for students in higher grades.
- The on-time graduation rate for the K12 schools is 49.1%, compared with a rate of 79.4% for the states in which K12 operates schools.
- Many families appear to approach the virtual schools as a temporary service: Data in K12's own school performance report indicate that 31% of parents intend to keep their students enrolled for a year or less and more than half intend to keep their students enrolled for two years or less. K12 also noted in this report that 23% of its current students were enrolled for less than a year and 67% had been enrolled for fewer than two years.

Discussion and Conclusion

The final section of the report summarizes findings specific to the research questions and explores a number of possible explanations for the generally weak performance of K12. Here (unlike the rest of the report) we include a broader discussion of full-time virtual schools as compared with traditional district schools and brick-and-mortar charter schools. We also present and discuss policy recommendations, highlighting a list of key questions for future research.

Possible explanations for poor performance of K12 schools

There are a number of possible explanations for the relatively poor outcomes of K12 and of full-time virtual schools on common measures of school performance.

- K12 maintains that commonly used school performance measures do not adequately apply to virtual schools, since they have high levels of student mobility. This argument has some merit and is comparable to similar obstacles faced by large urban districts. As applied to full-time virtual schools, this raises an important empirical research question: Are these schools simply enrolling students who would be mobile in any case, or are the schools contributing to or causing the mobility?
- Another possible explanation for the weak performance is that there are insufficient funds allocated for these schools. Our analyses found that K12's virtual schools receive less revenue on average than brick-and-mortar charter schools and district schools, although K12 schools (and other virtual schools) have a number of cost advantages that justify the differences in revenue. A more in-depth analysis of the true costs of educating students in full-time virtual schools is required to better understand whether insufficient revenue is indeed the cause of poor performance.

It is relevant to note that K12 Inc. shares positive news with investors about the profitability of the company and announced in May 2012 that it seeks to “increase profitability in fiscal year 2013” by implementing as much as \$20 million in costs savings. K12 argues that these cuts can be made “without any adverse effects on student performance, employee retention, customer satisfaction, or our growth rate.”¹ Such statements by K12 suggest that it believes that weaknesses in performance are not due to insufficient revenues or cannot be addressed with additional resources. An alternative explanation is that the company chooses not to address the weak performance of its schools to protect profits.

- A third possible explanation for the weak performance concerns inadequate or misaligned curriculum. This hypothesis was not explored in this study.
- A fourth possible explanation for the weak performance relates to inadequate or insufficient instruction. Based on our findings, K12 devotes considerably fewer resources to instructional salaries and benefits for employees. This reduced spending on salaries is linked to the fact that K12 has more than three times the number of students per teacher compared with overall public school student-teacher ratios. The higher student-teacher ratio and the reduced spending on teacher salaries, as well as on salaries for all other categories of staff typically found in schools, help explain the poor performance of K12’s schools. Also related to the issue of adequacy of instruction, we found that K12’s math scores, which are more dependent on instruction, were substantially lower than reading scores, which are more influenced by students’ home environment.
- Finally, we note the issue of “fit.” Full-time virtual schools may have the potential to provide an effective learning environment for some students but not others. Learning styles and resources within a home will differ from student to student. That possibility is not explored in this study, but it presents an important empirical question for later research as well as an important policy question concerning, for instance, the types of advertising being used to recruit new enrollees into full-time virtual schools.

Recommendations for policymakers

Based on the findings, the following policy recommendations are offered for states or other appropriate policymaking entities:

- **Slow or put a moratorium on the growth of full-time virtual schools.** In the area of full-time virtual education, states should place their first priority on understanding why the performance of virtual schools suffers and how it can be improved before undertaking any measures or programs to expand this new model of schooling.

- **Revise performance accountability measures for virtual schools.** Since some performance measures commonly used for public schools are inadequate or inappropriate for full-time virtual schools, more suitable measures should be devised, implemented and, over time, improved. Part of the solution may involve alternative or supplemental measures, including measures of market accountability.
- **Revise funding formula and financial oversight.** Funding formulas for virtual schools should reflect the actual costs of educating students in those schools, rather than the typical costs for educating students in traditional public schools. Given the high mobility of students in K12's virtual schools, the practice of allocating funding for students who enroll should shift to funding based on the number of students who satisfactorily complete courses. This model is already in practice at the Florida Virtual School. More transparency is needed to understand how full-time virtual schools spend public funds.

Future research and conclusion

Our study has raised more questions than we initially sought to answer. A list of questions for future research is included in the final section of the report as well as in Appendix F.

While we share the excitement of new technologies and the potential these have to improve communication, teacher effectiveness, and learning, we are convinced policymakers should move forward cautiously and only after piloting and thoroughly vetting new ideas. Although this report is modest in scope, we hope that its findings will help inform policymakers and motivate researchers to carefully study various aspects of full-time virtual schools. A better understanding of virtual schools can serve to improve this new model and help ensure that full-time virtual schools can better serve students and the public as a whole.

UNDERSTANDING AND IMPROVING FULL-TIME VIRTUAL SCHOOLS

A STUDY OF STUDENT CHARACTERISTICS, SCHOOL FINANCE, AND SCHOOL PERFORMANCE IN SCHOOLS OPERATED BY K12 INC.

Introduction and Conceptual Framework

Online learning for students in elementary and secondary education is becoming increasingly controversial, especially with the rapid expansion of full-time virtual schools. Because of the sudden appearance and growth of this sector, very little research evidence exists concerning costs, outcomes, or accountability related to virtual schooling.² Barth, Hull, and St. Andrie (2012) note that “news organizations, rather than education researchers, seem to be taking the lead in investigating and reporting the effects of virtual schools” (p. 2).³ Yet despite limited research evidence to guide policy, more and more states are passing legislation to permit fulltime virtual schools or to remove the caps that once limited their growth.⁴

The purpose of this report is to learn more about full-time virtual schools and better understand whom they serve, how they operate and spend their public revenues, and their impact on student learning. We are doing this by studying schools operated by K12 Inc., the nation’s largest provider of full-time virtual education at the elementary and secondary level. Our purpose is not to judge the merits of this company, of online instruction, or of the long-term growth of cyberschooling. Rather, we agree with the oft-repeated message that we need to know more about virtual schools so we can improve their performance and take measures to advance high-quality learning opportunities and ensure taxpayer dollars are well used.

Growth and Expansion of Virtual Schools

In 2006, a policy brief by Greg Vanourek⁵ published by the National Association of Charter School Authorizers helped lay out a framework for identifying and understanding the various dimensions and modalities of online learning. This framework illustrated a wide array of online options, ranging from delivery of individual courses, to hybrid or blended learning (i.e., part of the instruction in a given course is face-to-face, and part is delivered online), to full-time virtual schools. The focus in this report is on full-time virtual schools (also known as cyber schools or online schools), which deliver their curriculum and

provide instruction via the Internet and electronic communication. Most virtual schools are full-time, statewide, and asynchronous, with students learning from home and teachers working out of an office building or their home.

All types of online learning are expanding; however, full-time virtual schools are gaining the most attention. These cyberschools are being pushed as a new tool for expanding school choice, for privatization of schooling, and as a new investment opportunity; they are not simply a means to supplement and expand the courses available in traditional brick-and-mortar schools. With advocacy and lobbying by key providers, and with the support of national organizations advocating school choice, 30 states and the District of Columbia have created full-time virtual schools,⁶ and even more states have approved the use of online instruction to deliver one or more courses to students attending public schools.

Close to a quarter of a million students are enrolled in full-time virtual schools. These schools are often organized as charter schools and operated by for-profit education management organizations (EMOs).⁷ The largest operator of full-time virtual schools is K12 Inc., with 48 full-time virtual schools that enrolled just over 65,000 students in 2010-11. Connections Academies is the second largest for-profit operator, with 13 schools and just over 20,000 students in 2010-11.⁸ Note that the schools and students we count are only for those schools at which the virtual provider has full control and responsibility for the school. K12 Inc. may be hired to provide curriculum, software or learning platforms, or support, although the responsibility and control of the school remains in the hands of a school district or other public entity that is considered the operator, while K12 serves as a vendor. This study does not investigate those additional K12 services.

Figure 1 is adapted from a forthcoming book on school choice, to be released in the summer of 2012.⁹ In this book, virtual schools are found to represent a relatively small

portion of the overall school choice options, but they also constitute one of the fastest-growing among them. Enrollment in full-time virtual schools has been expanding rapidly in recent years, reaching the current estimate of 250,000 students, compared with fewer than 20,000 less than a decade ago. It is important to note that virtual schools, as a category of school choice, overlap with both homeschooling and charter

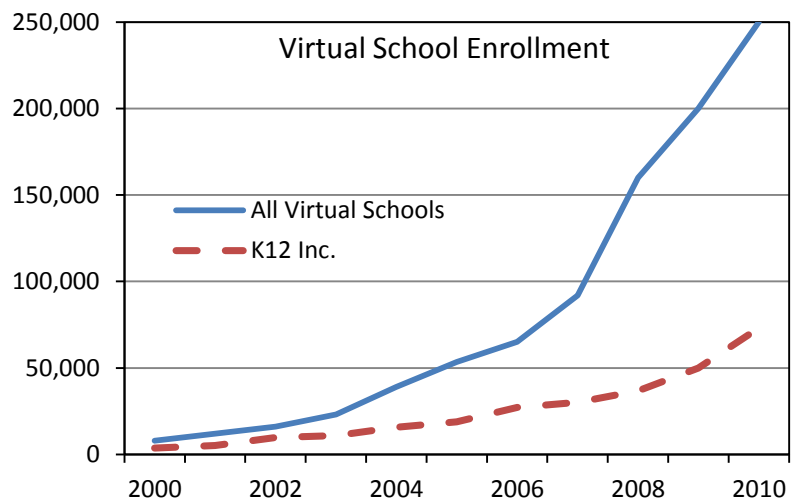


Figure 1. Estimated Enrollment Trends in Full-Time Virtual Schools

schools. Most virtual schools are organized as charter schools, although an increasing number of district and state education agencies are now starting full-time virtual schools. Private for-profit EMOs have played an important role in expanding the number of virtual schools and now operate these schools on behalf of charter school or district school boards.

The enrollment in schools operated by K12 Inc. was just over 65,000. Estimates by Evergreen Education Group (a consulting firm that prepares an annual review of policy and practice for online learning) suggest that K12 had over 80,000 students in 2010-11;¹⁰ we understand, however, that this includes both the schools that K12 operates as well as district-run schools for which K12 has a contract to provide services and support, but not for operational responsibility. Independent vendors such as K12 Inc. deliver close to half (47%) of all online courses in the country.¹¹

Arguments For and Against Virtual Schools

Advocates for expanding virtual schooling claim that by using technology to enable teachers to communicate more effectively with more students, virtual schools can improve student learning and performance.¹² Accordingly, there are claims that virtual schools can “potentially” improve productivity and decrease costs, but even proponents admit that there is still insufficient evidence to determine whether virtual schools are more effective than conventional schools or can actually reduce cost.¹³

A report by the Fordham Institute titled *Teachers in the Age of Digital Instruction*¹⁴ offered a vision for how technology might transform the teaching profession as well. Arguing that effective teachers will be even more important for online instruction, the authors suggest that salaries would rise for online teachers because of their greater effectiveness and because technology would allow them to reach more students, thus improving outcomes at lower cost. As Huerta (2012)¹⁵ found in his review of the report, however, evidence for such claims is insufficient to resolve whether that “potential” was real or just wishful thinking.

Another argument for full-time virtual schools is that they promote school choice. Choice advocates believe that there are inherent benefits that arise as more parents become active choosers. Perhaps most importantly, school choice theory posits that increased choice will impose “market accountability” in the form of competition that drives schools to improve as they compete to recruit and retain students.¹⁶

Critics, by contrast, raise a number of concerns about virtual schools at the elementary and secondary (K through 12) levels. These concerns are generally related to legislation and regulations that have not kept up with the rapid growth of virtual schools. Critics also question the motives of for-profit groups and school choice advocacy groups that lobby and advocate for the expansion of virtual schools.¹⁷

Below, we summarize the research connected to the relative effectiveness of full-time virtual schools and the relative cost for these schools. Note that we are using “cost” here as meaning the same thing as “expenditures.” The more technically accurate use of the term would also take into account issues of productivity: the effectiveness of what is being purchased through that expenditure. We have adopted the more common usage because we are reporting on the work of others who have similarly taken that approach.

Effectiveness of virtual schools

In a policy brief, Glass and Welner (2011)¹⁸ reviewed research evidence related to the growth of online learning, the effectiveness of virtual schooling in terms of student achievement, the cost of virtual schooling, and the quality of virtual schools in terms of how these might be evaluated by accreditation agencies. They found that “no study examined test performance over an extended period of time, none attempted to compare outcomes for virtual and traditional full-time schooling, and none looked at a complete curriculum” (p. 5). Instead, they concluded that “there exists no evidence from research that full-time virtual schooling at the K-12 level is an adequate replacement for traditional face-to-face teaching and learning” (p. 5).

The most comprehensive meta-analysis of research on online learning to date, published in 2009 (and revised in 2010) and commissioned by the U.S. Department of Education, offers little help. Researchers found a slightly positive impact of online courses, but most of the studies reviewed were at the tertiary level (higher education and medical training) and were restricted to individual courses rather than studying full-time programs or schools.¹⁹ Glass and Welner (2011, p. 5) summarized the findings as follows: “only five studies included in the meta-analysis were conducted at the K-12 level, and all of these involved comparisons of blended online plus face-to-face instruction versus only face-to-face instruction. Moreover, of the seven effect sizes from these five studies, two actually favored face-to-face instruction over blended instruction.”

Thus, specific to full-time virtual schools at the elementary and secondary school levels, few studies have been completed on student achievement. These few studies are evaluations of charter schools, with results broken out for the subgroup of full-time virtual charter schools, or they are audits commissioned by states that address an array of issues, including performance. The findings have been largely negative. In a 2003 study of California charter schools, Zimmer et al. (2003)²⁰ included some non-classroom-based charter schools and found that they had lower achievement scores than traditional public schools and other charters. In a 2002 evaluation of Pennsylvania charter schools, Miron, et al.²¹ found that four virtual charter schools performed worse than or similarly to comparison groups. A more recent study by CREDO (2011)²² looked at student achievement in charter schools in Pennsylvania, which now has the nation’s largest concentration of virtual charter schools. One-third of all charter school students in Pennsylvania are enrolled in eight very large virtual charter schools. This was the most

rigorous study of full-time virtual schools because it relied on student level results, it carefully matched students with similar non-charter students, and it based its analysis on students who remained in the virtual schools for at least two consecutive test events. The CREDO study found that students in charter schools were making significantly smaller gains in learning over time than matched students in traditional public schools. While students in brick-and-mortar charter schools were slightly behind their matched peers in district schools, the gains in learning over time by students enrolled in virtual charter

A study of Colorado virtual schools found that half the online students wound up leaving within a year, and when they returned they were often further behind academically than when they started.

schools were even smaller still. The math gains by virtual charter school students were substantially worse than the reading results which also showed virtual charter school students significantly behind their matched peers in brick-and-mortar district schools. All eight virtual charter schools in Pennsylvania showed learning gains that were significantly smaller than matched peers for both reading and math. There was not a single subject test in any of the eight schools that favored the students in the virtual charter schools.

In a study of Colorado virtual schools, Hubbard and Mitchell (2011)²³ found that half the online students wound up leaving within a year, and when they returned they were often further behind academically than when they started. This study also found that the Colorado online schools produced three times as many dropouts as they did graduates and that one of every eight online students dropped out of school permanently, four times the state average for the study period. These findings were similar to those in a 2006 study of Colorado virtual schools conducted by the State Audit Office.²⁴ This earlier study also found that online students performed poorly on the state assessments, especially in math, and that they had high rates of grade repetition, attrition, and dropping out.

An evaluation of Wisconsin's virtual schools found that virtual charter school students typically scored higher on state assessments in reading than other public school students, but lower in mathematics.²⁵ Additionally, the Wisconsin study, which spanned a three-year period, found that only a small number of students were continuously enrolled in virtual charter schools over that time and their performance varied.

In Minnesota, the Office of the Legislative Auditor evaluated online schools in 2011 and found that students in full-time online schools had low course completion rates and elevated school drop-out rates. They also found that students tended to lose more ground on the state math assessment.²⁶ Although no state-authorized audit of full-time virtual schools has been undertaken in Arizona, there has been considerable reporting on the relatively weak performance of students in the state's full-time virtual schools.²⁷

Over the last two years, the annual EMO profiles reports published by the National Education Policy Center have included indicators on adequate yearly progress (AYP) status and school performance ratings assigned by state education authorities. Of the full-time

virtual schools operated by private EMOs, only 27% are classified as meeting Adequate Yearly Progress.²⁸

Relative Costs for Virtual Schools

There is an assumption that virtual schools are inherently more efficient because they operate at less cost than brick-and-mortar charter or traditional district schools. Examining virtual school legislation in 19 states, Thedy (2010) found that the funding formula for virtual charter schools was usually the same as for brick-and-mortar charter schools. Based on her analysis, she also established a set of recommendations to help ensure the quality, equity, and fiscal responsibility of virtual charter schools.²⁹ Barth, Hull, & St. Andrie (2012)³⁰ reviewed policies regarding funding for virtual schools and found that depending on the state, the virtual schools were receiving between 70 and 100 percent of what traditional district schools received. In terms of funding for K-12 virtual schooling, Glass and Welner (2011) similarly concluded that state reimbursement policies varied widely.

Just because virtual schools and brick-and-mortar schools do not receive the same allotments per pupil does not mean they are treated differently according to the funding formula. As we explained in our national charter school finance study in 2010,³¹ charter schools may be funded equally under the formula, but since many charter schools do not offer a full range of programs or serve large numbers of children with disabilities, they are not receiving as much in categorical funding. Charter schools and full-time virtual schools can, if they wished, qualify for more categorical funding by offering programs and services like vocational and technical education, and they can receive more money if they enroll more students with disabilities, particularly children with moderate and severe disabilities.

Recently, the Fordham Institute published a study on the costs for online learning.³² This study was based on interviews with about 50 entrepreneurs, experts and vendors in the field. The study estimated the annual cost for full-time virtual schools to be \$6,400 per pupil, compared with approximately \$8,900 for “blended learning” schools and \$10,000, which is what the authors calculated was the average cost per pupil for all schools in the U.S. Although the study lacked rigorous methods and there was a wide range of estimates, a review of the report by Rice (2012) concluded that it did explore a number of important topics and shared valuable insights, particularly in discussing the upfront costs of virtual schools and factors that can affect costs in diverse categories of expenditures.³³

Similar to the Fordham Institute study, an earlier study sponsored by the BellSouth Foundation³⁴ also relied on interviews of persons seen as familiar with actual spending on virtual schools. This study concluded that virtual and brick-and-mortar schools had similar total costs and should be allocated matching public funds. This study did concede,

however, that it did not consider areas in which virtual schools had clear costs advantages such as facilities and transportation.

For its analysis, the Wisconsin State Audit Office broke out expenditures by virtual schools into three broad categories: curriculum-related costs, staffing costs, and other expenditures. Below is a description of these three categories and the proportion of total expenditures that each category comprised.

- *Curriculum-related costs* (47.5% of total expenditures). Most virtual charter schools purchase at least a portion of their online class curricula from contractors. They can purchase individual online classes or a license to own and modify a class for use from year-to-year. Curriculum-related costs also include students' computers, printers, and Internet subsidies.
- *Staffing costs* (45.8% of total expenditures). These expenditures included staff salaries and fringe benefits; travel to meet with pupils in or near their homes, to conduct pupil orientation sessions around the state, and to attend training events; and staff professional development, training, and dues and fees related to memberships in professional organizations.
- *Other expenditures* (6.7% of total expenditures). This category consists largely of advertising expenses, computer equipment and maintenance, and office supplies.

One of the key results from this Wisconsin audit was that in five out of 15 virtual charter schools, per pupil expenditures were higher than their chartering school districts' per pupil education costs. In other words, a third of the virtual charter schools spent more per pupil than what was spent for similar services, on average, at other schools within their districts. Economies of scale appear to be the culprit; the five virtual charter schools whose per pupil expenditures exceeded their chartering districts' per pupil education costs were all small schools, so the costs for the schools could not be distributed across a large number of students as happens in school districts or in the large virtual schools.³⁵

Michael Barbour has been studying virtual schools for some time and has compared the costs for virtual schools and brick-and-mortar schools.³⁶ He notes that the actual cost for virtual schooling, particularly the cost for full-time virtual schools, are difficult to determine since many of the schools are operated by for-profit companies. After reviewing a detailed budget for one of K12's full-time virtual schools, he concluded that it was still not clear which category of the budget paid for K12's proprietary course management system, which should be a large but readily recognizable expense. Barbour notes that district-operated virtual schools are more transparent with their financial data than those virtual schools operated by for-profit EMOs.

One thing we learned from our analysis is that it is not possible to explain fully how K12 Inc. spends the public resources it receives using the federal finance dataset. We are, however, able to determine categories or areas in which K12 is devoting relatively little or none of the money it receives from public sources.

Research Questions Addressed in this Report

- What are the characteristics of the students enrolled in K12 schools and how does this differ from same-state averages? Here we consider race/ethnicity, the percentage of students who qualify for free and reduced-price lunch and special education services, the proportion of students classified as English language learners (ELL), and the distribution of students enrolled by grade.
- How do the amount and source of public revenue for K12 schools differ from other charter schools and district schools?
- How do the patterns of expenditure for schools operated by K12 differ from other charter and district schools?
- What are the reasons for K12's very low proportion of schools meeting Adequate Yearly Progress?
- What is the performance of K12's schools relative to same-state averages for all public schools? Specifically, we consider the proportion of students meeting state standards, graduation rates, and performance ratings assigned to schools by state education authorities.
- What lessons can be learned from this analysis of K12 Inc. that could inform overall policy for full-time virtual schools?

Methods and Data Sources

This report draws on publicly available data, collected, audited, and warehoused by public authorities. The data sources are publicly available and are clearly documented. For this reason, readers will find it relatively easy to track and verify the data we report. To a large extent we allow the data to speak for itself, with relatively little interpretation until the final section of the report. Because this report draws on publicly available data, we made no data requests to K12 aside from the requests we make in connection with our annual report providing profiles of EMOs, when we ask K12, as we ask all other private EMOs, to confirm or help us revise the general information we report on their fully managed public schools across the nation.

The scope of our study is limited to the full-time, virtual public schools for which K12 has a contract to manage in their entirety. There were 48 such schools operating in 2011-12. Our analysis does not include the virtual schools operated by school districts that use services, software, or curriculum from K12. Nor does our analysis cover other services offered by K12, such as the fee-based delivery to public and private schools of individual courses or curriculum, both in the United States and abroad.

This report represents a relatively quick and direct effort at gathering and reporting publicly available data. Although no sophisticated methods are used, we believe that the data sources and methods used allowed us to answer the research questions we have posed and, just as importantly, allowed us to identify new questions and areas for future research. When appropriate and necessary, further details about the methods are included in the sections containing actual findings.

Study of K12 demographics. The primary sources for demographic data were state-level datasets and school report cards. If data were not found on state-level websites, we gathered information from the National Center for Education Statistics (NCES). The most recent data available from the NCES, as well as from the Idaho and Arkansas departments of education, are from 2009-2010. For the remaining states, data are from the 2010-2011 school year.

Study of K12 revenues and expenditures. Financial data come from the NCES Common Core of Data School District Finance Survey (F-33), School Year 2008–09 (Fiscal Year 2009), the most recent year for which national school finance data are available. Spending by category is reported both as a percentage of *Total Current Expenditures* (TCE) and as a per-pupil amount.

Seven unique K12 districts had financial data reported in the federal data set. However, one of these districts, Utah Virtual Academy, had suspiciously low total per-pupil revenues reported (\$114) so we decided to remove this district from the analysis. The remaining six K12 units with district status comprised seven of the individual K12 schools (Arkansas' two Virtual Academies are reported together). This represents seven of the 37 (18.9%) K12 schools operational in 2008-09. The remaining K12 schools' financial data were not separate from other schools in the CCD dataset. Although our financial analysis only covers seven K12 schools, these are very large and more established schools and they accounted for 58.2% of the K12 enrollments in the 2008-09 school year.

The comparison groups for these schools are the state average for all public schools and the state charter school average. Only states with K12 schools are included when results have been aggregated across charter school averages or across comparison states. When we aggregate the data, we always use weighted averages based on enrollment. This means that the influence of a school, district, or state on the aggregate results is proportional to its enrollment.

Limitations

There are five general limitations that readers should keep in mind.

Completeness of demographic data. While data on student ethnic background and free and reduced-price lunch status were rather complete, the special education data were not. This was particularly problematic in states where charter schools are not considered Local

Education Authorities or districts and thus did not have the legal responsibility to provide special education services.

Completeness of school finance data. Although many indicators in the Common Core of Data are reported at the building level, finance data are reported at only the district level. This has implications for this study, since in many states charters are not organized into their own districts. Instead, they have autonomy but remain legally part of a public school district for reporting purposes. NCEs statistical reports on finance categorize districts in three ways: (1) districts including only individual charter schools or groups of charter schools, (2) districts with both charters and traditional public schools, or (3) districts with no charter schools at all. This categorization represents a critical obstacle to obtaining a comprehensive survey of financial data, because many K12 schools are in mixed districts (or in full charter districts, but with other non-K12 schools), with no way to parse out K12 data.

In examining finance data, this report focuses only on K12 schools with data in the federal school district data set. In the end this meant we had usable data on only seven K12 schools, although these seven schools represented 58.2% of K12's total enrollment in full-time virtual schools. Our analyses included only public sources of revenues since none of the K12 districts included in this analysis reported revenues from private sources. Given the limited scope of this project, we could not mine state or district data sets, nor could we piece together the school finance from individual audits.

A lot has been written and shared about K12's corporate finance data, including the value of its publicly traded shares and the rapid growth of its annual revenue figures. Analyzing and interpreting this information is also beyond the scope and purpose of this report.

Selection of comparison groups. For this study, we use two comparison groups: each K12 school's state average and state charter schools' averages. When possible, we have also included national data for comparison purposes. We recognize that large differences can exist within states and that state averages, K12 districts, and charter school districts may not draw the same types of student. We compare groups of schools by calculating mean scores for each group, however, these mean scores can mask considerable differences among schools in the same group

Comparing two different forms of schooling. It is difficult to compare two inherently different forms of schooling. This is especially true with finance data. However ill-fitting, state and federal agencies use the same categories and variables for expenditures for virtual schools as they use for brick-and-mortar schools. Comparing spending is also complicated by the fact that virtual schools may spend more in start-up and expansion phases and less when schools are at full capacity. Further, the extensive involvement of private EMOs in the full-time virtual school sector means that sizeable fees are paid to the private operator and may be lumped into a single category of spending, even while the private operator may spend these resources across a number of areas.

Evolving and changing group of schools. It is important to note that the network of K12 schools is changing and growing rapidly and that the number, demographic composition,

and financial data of K12 schools today could be significantly different from 2008-09, the most recent year that financial data are available, or even from 2010-11, the most recent year that demographic and performance data were available.

Student Characteristics

Before examining school performance data, we analyzed and summarized results related to student background characteristics. This provides important contextual data that help to explain differences in school finance and school performance, both of which are explored later in this report.

Race-Ethnicity

The data from K12’s fully-managed schools indicate that three-quarters of the students are white [technically it is probably “White-Non-Hispanic”], which compares with 55% for the mean in states with K12 schools (see Figure 2). The proportion of black students served by K12 is similar to the state mean at 10.7% and 11.3%, respectively. But there is a large disparity between K12 and the comparison states in terms of the proportion of Hispanic students they enroll; K12 has 9.8% Hispanic students and the state mean is 27.6%. Although K12 has schools in places with higher than average concentrations of Hispanics (e.g., Arizona, California, and Texas), these virtual schools appear to be less attractive to Hispanics, or perhaps K12 is doing less outreach or marketing to this population.

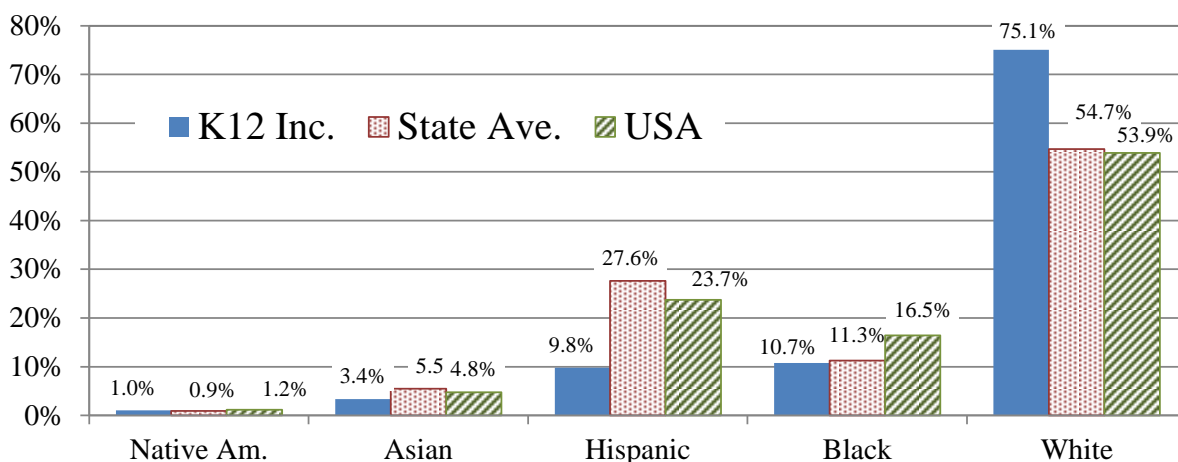


Figure 2. Ethnicity of Students in K12 Schools Compared with State and National Means, 2010-11

While the results in Figure 2 summarize weighted averages across all K12 schools and all host states, we also tallied the direct comparisons between each K12 school relative to its respective state average. At its South Carolina and Chicago, IL, schools, K12 had a higher proportion of nonwhite students relative to its respective state, but in all other schools, K12 consistently had a noticeably higher proportion of white students in its virtual schools compared to the states in which these schools are located.

FRL, Special Education, and English Language Learner Status

As illustrated in Figure 3, the proportion of students qualifying for free or reduced-price lunch (FRL) in K12 schools is 7.3 percentage points lower than the state mean (39.9% for K12 schools compared with 47.2% for states). In ten of its California schools, plus its Arizona, Ohio, Washington DC schools and its Chicago, IL school, K12 enrolled a higher proportion of FRL students compared to the respective state average. In the other two-thirds of its schools at which data were available for both the K12 school and the host state, we found that K12 consistently had a lower proportion of students that qualified for FRL.

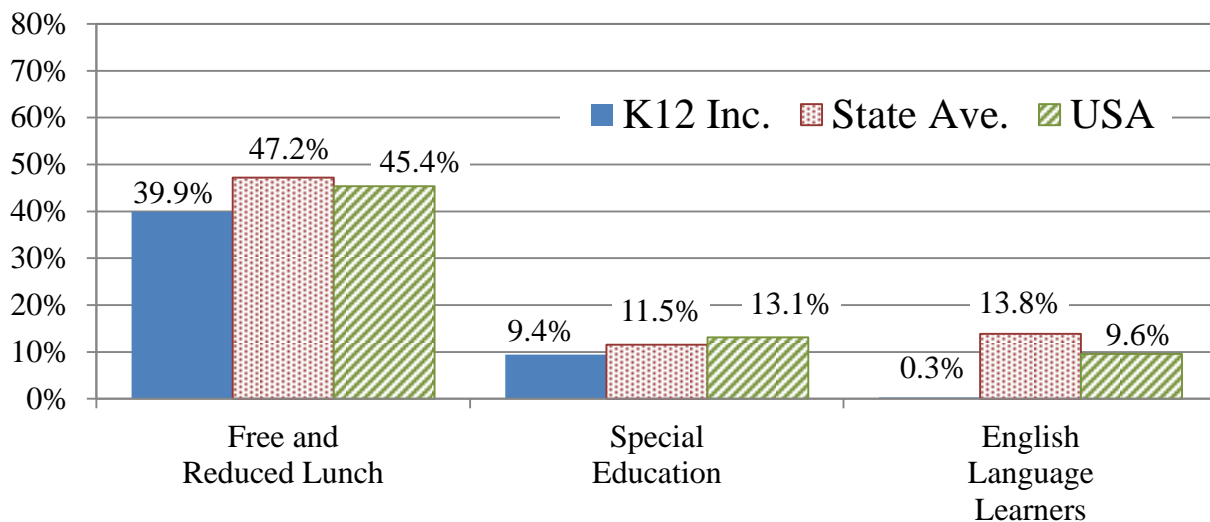


Figure 3. Proportion of Students Qualifying for Free and Reduced-Priced Lunch, Classified as Special Education, or Classified as English Language Learners, 2010-11

Figure 3 also depicts the proportion of students that are classified as special education. To be classified for special education, students must be identified with a disability and have a Individualized Education Plan (IEP) on record. The proportion of students with disabilities in K12 schools is two percentage points lower than the comparison state average and 3.7 percentage points lower than the national average (i.e., 9.4% for K12,

11.5% for comparison states, and 13.1% for the nation). In five K12 schools, the proportion of students classified for special education was slightly higher than the state average, while the remaining K12 schools with data available had fewer students with disabilities.

Given that charter schools usually have substantially lower proportion of students with disabilities compared to district schools or state averages,³⁷ one might expect an even greater disparity, but the relatively small difference in the overall proportion of students with disabilities between K12 schools and their respective states does not mean that the two groups serve students with similar disabilities. Past research has established that traditional public schools typically have a higher proportion of students with moderate or severe disabilities while charter schools have more students with mild disabilities that are less costly to remediate or accommodate.³⁸

We will return to these special education results later in the report, when discussing K12's spending. Schools can qualify for more funding for each child with a disability that is served, although the actual level of funding support and the funding formula that determines the amount of additional funds for students with disabilities varies considerably from state to state. Given that nearly one in ten of its students has a diagnosed disability, K12 is able to receive a considerable amount of additional public revenue to serve these students. In our school finance results later in this report, we include data on spending for special education, indicating that K12 spends a fraction of what other charter or districts spend on special education.

English language learners represent a growing proportion of students in our nation's schools, especially in the states served by K12 Inc. But only 0.3% of K12's students are classified as English language learners (ELL). This is a striking difference from 13.8% for the states that have K12 schools (see Figure 3). None of the K12 schools had higher proportions of ELL students than their respective state and most schools have fewer than 1% ELL students. With 6.3% ELL students, Community Academy Public Charter School located in Washington DC was the K12 school with the most ELL students.

Specific demographic data for each of the K12 schools and their respective states can be found in Appendix A. In this appendix, it is also possible to see the number of schools and states that were considered when calculating the weighted means.

Enrollment by Grade Level

The enrollment distribution of students by grade in all of the K12 schools is depicted in Figure 4. A disproportionate number of students served by K12 are in middle school grades while the number of students in the upper grades drops substantially after eighth grade. The distribution of students in all public schools in the country is also illustrated in Figure 4. Given the comparatively equal size of age cohorts in the nation's population, one can see a relatively even distribution of students across each grade in the distribution for the

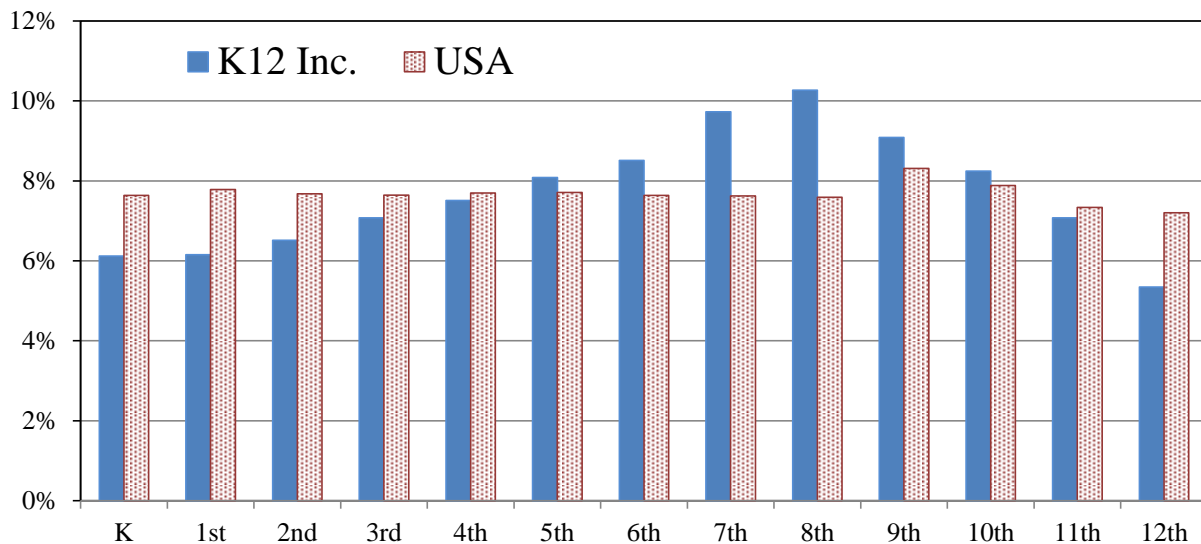


Figure 4. Distribution of Enrollment by Grade Level for K12 Schools and for USA, 2010-11

whole country, although there is a gradual drop off from grades 9 to 12. Note that in the national population there is an increase at grade 9 which is due to some students not obtaining enough credits to be classified as 10th graders. Starting in grade 10, however, the enrollment per grade continues to decrease, reflecting the nation’s dropout problem.

The sharp drop in K12 enrollments in the high school grades is likely a result of attrition (transferring to brick-and-mortar schools) as well as students dropping out of schools. Further, this might be explained by some K12 schools that have not yet fully expanded enrollment to include all grades.

Whereas Figure 4 depicts the proportion of total enrollment at each grade level, Figure 5 illustrates the actual number of students served by K12 at each grade level.³⁹ Here one can see the increase in the middle school grades and the sharp decrease in enrollments in the high school grades. When we look at the number of schools that serve high school students we can see that this number is relatively consistent and only decreases by a few schools in the high school grades. This indicates that a large portion of K12 schools have classes in grades 9 to 12, but the class sizes drop dramatically after the ninth grade. As noted earlier, this could be a result of some K12 schools not fully rolling out their enrollment plans across all high school grades. Nevertheless, based on the low graduation rates in K12 schools—which we will discuss later—we believe this drop off in students is also explained by a relatively large proportion of students not persisting into the upper grades, and replacement of students in the full-time virtual schools does not appear to occur as often in these grades as it does in the lower grades.

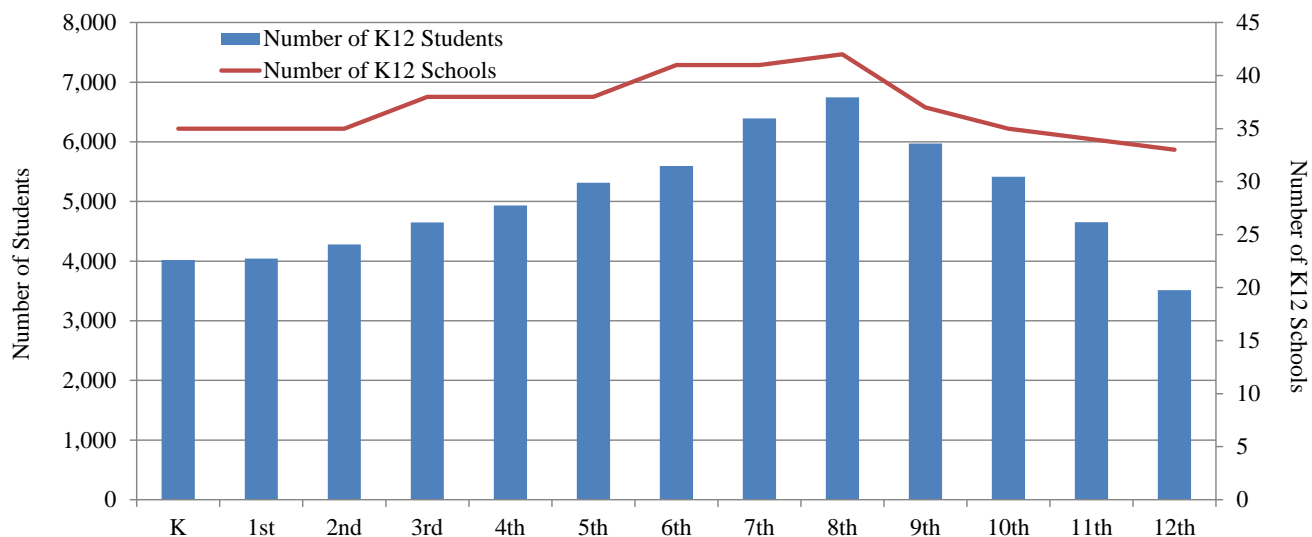


Figure 5. Number of K12 Students Per Grade Level and Number of Schools that Offer Instruction at Each of the Grade Levels

Analysis of School Revenues and Expenditures

In this section, we provide a comprehensive and detailed review of financial data for a subset of K12 schools, including revenues and total current expenditures. Our analysis is based on the required reporting on the public monies received and spent on behalf of the schools.

The level of per-pupil funding that K12 receives through federal, state, and local sources varies considerably from state to state because of differences in state funding formulas. Our financial analysis focuses on examining and comparing the amounts and sources of revenues and patterns of expenditures for K12 schools, other charter schools, and traditional public schools. To accomplish this we report data for four groups which can then be compared: (1) K12 schools, (2) charter schools in states in which K12 has schools, (3) all public schools in states in which K12 has schools, and (4) national average for all public schools.

As described in the methods section, financial data are only reported by school districts or local education authorities (LEAs). Because in many cases K12 schools do not have LEA status, or because charter school data in some states are combined with local district finance data, we were only able to obtain data from the federal district finance dataset for seven K12 schools, which comprise a total of six K12 district records. The schools included in this analysis reside in just five states: Arizona, Arkansas, Idaho, Ohio, and Pennsylvania. However, although our financial analysis only covers seven K12 schools from five states, these schools accounted for 58.2% of the K12 enrollments in the 2008-09

school year. Thus, the analysis covers the majority of enrollment for that year, but the representativeness of the remaining K12 schools is open to question, particularly since (as will be seen in the data presented below) the numbers vary so much between the seven included K12 schools. It should be noted that several factors make the examination of traditional public school and charter school finance difficult. These include:

- Funding formulas for both traditional public schools and charter schools tend to be complex and vary considerably from state to state.⁴⁰
- Some types and sources of revenue are not easily captured, are not reported by schools and state agencies, or both. For example, schools' general operating funds may be supplemented by allocations for capital investments, or for such supplemental services as transportation, vocational programs, or school health programs. Moreover, many charter schools secure large sums of private revenues, often kept outside the purview of analysts.

Although a few states have reduced revenues for virtual charter schools relative to brick-and-mortar charter schools, most states fund these two types of school with the same formula and rules. Nonetheless, this can still result in less per pupil revenue for K12 schools or the charter schools since these schools enroll fewer students with special needs and are less likely to provide supplemental or optional programs that qualify for additional funding.

Revenues

This section presents findings from a comparison of (1) revenues relative to the number of students enrolled, and (2) revenue sources. It is important to reiterate that comparing only K12 or charter school revenues with those of traditional public schools can produce a misleading picture. Note that we use the term “revenue” instead of “allotment” since this is how public resources allocated to public schools are referred to in the federal school district finance dataset. Traditional public school revenues often include funds for programs like adult education, not required of charter schools; traditional public schools receive and spend substantially more on special education and student support services; some traditional public school revenues include money earmarked for transportation of district students to charter schools, private schools, or both;⁴¹ and charter schools are less likely than traditional public schools to report private revenue sources. Moreover, states' funding formulas differ tremendously in important respects, such as the cost of living in a given area and how much of the funding is provided from the local level versus the state level. As is evident from the data presented below, this matters; if we were looking only at Pennsylvania or only at Idaho, the numbers would be considerably different. Averages of these seven K12 schools, therefore, should be interpreted with care and readers are encouraged to review school specific data in Appendix B.

Combined revenues. All public schools, including charter schools, can receive revenue from four major sources: federal, state, and local governmental sources, and private sources. In many states, schools are supposed to report private revenues as a component of local revenues.

The K12 schools received an average of \$7,393 in governmental sources of revenue per pupil in 2008-09, which is less than what charter schools or district schools received. The national average for all public school districts is \$12,139. The average per-pupil revenue for Arizona, Arkansas, Idaho, Ohio, and Pennsylvania is only slightly lower, \$11,706. The average combined per-pupil revenue for charter schools in these five states is \$9,258.

Federal, State, and Local Revenue. Figure 6 shows mean per-pupil revenues by source for the four groups we are comparing. The subset of seven K12 districts received significantly less in federal dollars (\$373) than the national average (\$1,104), the averages for states in which they are located (\$853), or charter schools districts in those states (\$883). On average, K12 schools also receive less revenue per pupil from state sources (\$3,683) than the national average (\$5,589), the five states' average (\$5,203) and less than charter districts in those states (\$5,366). In terms of local sources of funding, K12 districts report \$3,337 per pupil, which is less than the national average (\$5,445) and the states' average (\$5,650), but slightly more than charter schools in those states (\$3,009). Note, however, that the state and local averages are hiding extreme state-level variations, tied to the different approaches in the different states' school funding formulas (see Table 1).

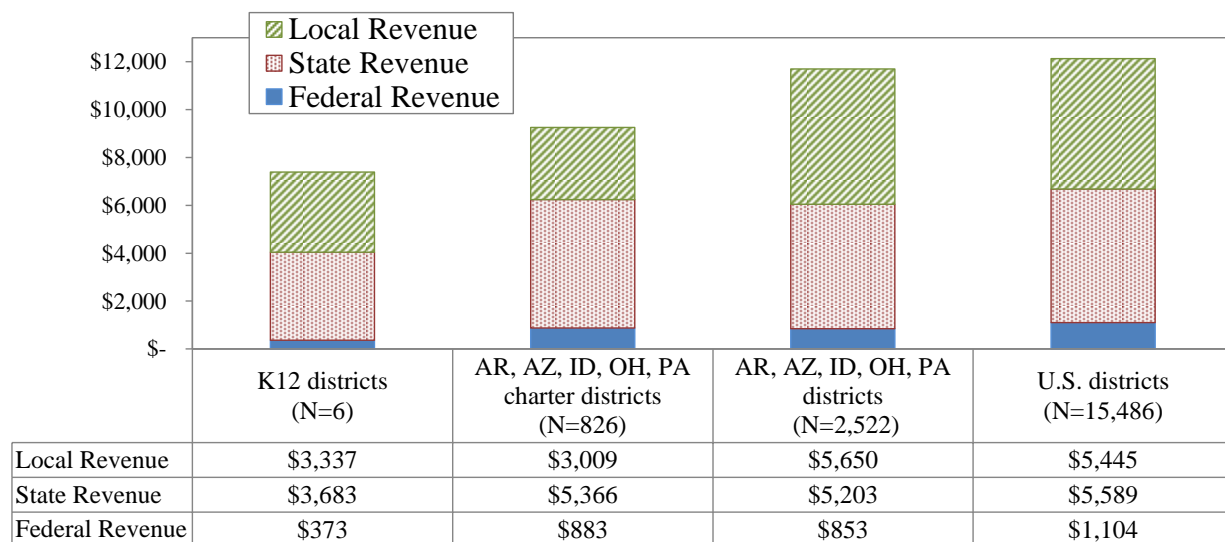


Figure 6. Distribution of Public Revenues by Source

Table 1 shows the variation in revenues by source for the six K12 districts. Combined revenues vary significantly, from Idaho Virtual Academy, which reports \$4,965 revenue per pupil, to Agora Cyber Charter School, which reports \$10,006 total revenue per pupil.

Table 1. Per-Pupil Revenue Broken Out by Source for K12 Schools and Comparison Groups (2008-09)

School	Federal Revenue	Same-State Revenue	Local Revenue	Total Revenue
<i>Arizona Virtual Academy (AZ)</i>	\$318	\$6,489	\$10	\$6,817
<i>Arkansas Virtual Academies (AR)</i>	\$599	\$5,860	\$2	\$6,461
<i>Idaho Virtual Academy (ID)</i>	\$406	\$4,511	\$48	\$4,965
<i>Ohio Virtual Academy (OH)</i>	\$443	\$5,797	\$13	\$6,253
<i>Agora Cyber Charter School (PA)</i>	\$257	\$102	\$9,647	\$10,006
<i>Pennsylvania Virtual Charter School (PA)</i>	\$404	\$216	\$9,212	\$9,831

Each of the schools' revenues are compared to the national average, state average, and state charter school average in Appendix B.

Private sources of revenues. None of the six K12 districts included in this analysis reported private contributions. But such contributions may nonetheless be included in the figures reported here, and they may still comprise a part of the overall revenue available to the school.⁴² In the federal NCES School District Finance Survey dataset, private revenues are considered a form of local revenues. Although some states break out revenue sources in four categories (federal, state, local, and private), states generally also group private revenues with local revenues.

Expenditures

In line with common practice among researchers who compare financial data across districts and states, this study also examines spending across diverse categories as a proportion of *total current expenditures* (TCE). TCE excludes capital outlay, which can increase and decrease dramatically from year to year. It also typically limits data to expenditures on elementary and

Table 2. Total Current Expenditure Per Pupil for K12 Districts

School	Total current expenditures
<i>Arizona Virtual Academy (AZ)</i>	\$6,155
<i>Arkansas Virtual Academies (AR)</i>	\$6,299
<i>Idaho Virtual Academy (ID)</i>	\$4,892
<i>Ohio Virtual Academy (OH)</i>	\$6,088
<i>Agora Cyber Charter School (PA)</i>	\$9,446
<i>Pennsylvania Virtual Charter Sch. (PA)</i>	\$9,532

secondary education, excluding such services as adult education and community services that are often neither required nor generally offered by charter schools.

On average, K12 schools spend less per pupil in total current expenditures (\$7,156) than the national average (\$10,267), the states' average (\$9,534), or charter districts in those states (\$8,327). Table 2 shows the variation among the six K12 districts in per-pupil total current expenditures. The K12 schools range from \$4,892 per pupil (Idaho Virtual Academy) to \$9,532 (Pennsylvania Virtual Charter School).

Spending on instruction and instruction-related costs. The NCES School District Finance Survey⁴³ contains 68 indicators related to expenditures. We have grouped these indicators into four categories: (1) instruction and instruction-related activities, (2) student support services, (3) administration, and (4) operations. Differences among the comparison groups in terms of spending on these four major categories are illustrated in Table 3 and Figure 7 below. In Appendix E, we compare each K12 district's spending on these four categories with state averages and state charter district averages.

NCES' School District Finance Survey defines instruction expenditure as

...payments from all funds for salaries, employee benefits, supplies, materials, and contractual services for elementary/secondary instruction; excludes capital outlay, debt service, and interfund transfers for elementary/secondary instruction. Instruction covers regular, special, and vocational programs offered in both the regular school year and summer school; excludes instructional support activities as well as adult education and community services (p. B-5).

Table 3. Break Out of Expenditures Across Four Broad Categories of Spending, 2008-09

Comparison Group (Number of Students)	Instruction	Student support services	Administration	Operations	Total Current Expenditures	Instruction	Student support services	Administration	Operations
USA: All Public School Districts (N=48,979,375)	\$6,256	\$1,021	\$769	\$2,221	\$10,267	60.9%	9.9%	7.5%	21.6%
5 State Average (N=5,413,237)	\$5,588	\$945	\$748	\$2,253	\$9,534	58.6%	9.9%	7.8%	23.6%
5 State CS Average (N=273,343)	\$4,563	\$502	\$1,561	\$1,700	\$8,326	54.8%	6.0%	18.7%	20.4%
K12 Districts (N=21,866)	\$5,068	\$230	\$1,499	\$359	\$7,156	70.8%	3.2%	21.0%	5.0%

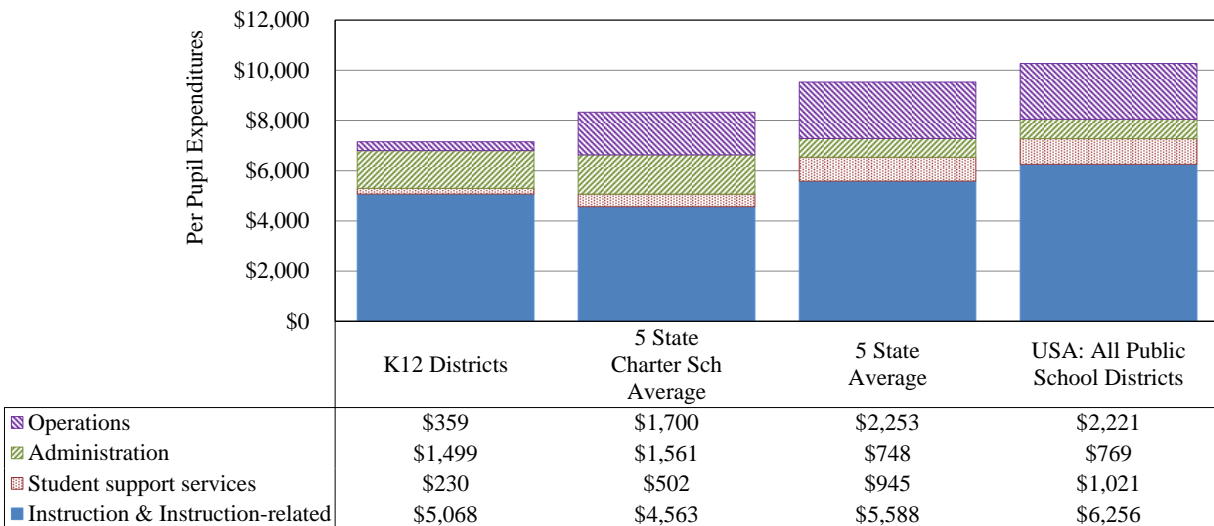


Figure 7. Total Current Expenditures Broken Out Across Four Main Categories of Spending. 2008-09

K12 spends more on instruction (\$5,068 per pupil) than charter schools in their states (\$4,563) but less than the national average (\$6,256) or the average of all schools in their states (\$5,588). When per-pupil amounts are converted into percentage of total current expenditures, K12 schools spend a larger portion of their total current expenditures (i.e., 70.8%) on instruction than any comparison group. We believe that a large portion of the \$5,068 is used for computers that are loaned to students as well as contracts for online curriculum and the learning platform that are provided by K12 Inc. As we will show later, only a small portion of the overall instructional costs are devoted to teacher salaries, which is just the opposite for brick-and-mortar schools.

Spending on student support services comprises pupil support services and instructional staff support services. NCES’s School District Finance Survey defines pupil support services as, “expenditure for attendance record keeping, social work, student accounting, counseling, student appraisal, record maintenance, and placement services. This category also includes medical, dental, nursing, psychological, and speech services” paid for by schools (p. B-10). At \$230 per pupil, K12 spent the least per pupil on student support services compared with the other 3 groups. Charter schools in the states with K12 schools spend over twice as much as K12 schools (\$502) did on student support services, and this amount was substantially less than the state average for all public schools (\$945) or the national average (\$1,021). This may reflect that charter schools and K12’s virtual schools serve different types of students with disabilities than do traditional public schools or this could simply be due to reduced services and support provided by charter schools and K12 virtual schools.

Spending on administration. The administration category is made up of school administration costs, defined by NCES as “expenditure for the office of the principal services” (p. B-10), and general administration, defined as “expenditure for board of education and executive administration (office of the superintendent) services” (p. E-8). K12 spending on administration (\$1,499) is significantly greater than the national average (\$769) and the states’ average (\$748), but slightly lower than the states’ charter school average (\$1,561). As Figure 8 shows, K12 schools paid more in administrative costs as a percentage of total current expenditures than did any other comparison group, although charter school districts as a whole were close behind (20.9% compared to 18.7%, respectively).

Salary and benefits for administrators are part of the overall administration category of expenditures. Figure 8 showed that as a percentage of total current expenditures, K12 districts spend 20.9% on administration, more than any other comparison group. However, unlike what one might expect, the per-pupil dollars K12 reported spending on specific salaries and benefits are not greater than other comparison groups. Figure 8 shows total spending on administration, as well as total administration salary and benefits, as a percentage of total current expenditures, for each comparison group.

On average, U.S. public school districts spend most of the money allocated to administration on salary and benefits. This is also true for the five states where the six K12 districts analyzed are located. Charter schools in these five states spend 18.7% of total current expenditures on total administration costs, but only 10% of total current expenditures is spent on administration salary and benefits. This shift is much more extreme in the K12 districts’ data available in the 2008-09 F33 financial survey. Though K12 spends 20.9% of total current expenditures on administration, only 3.4% of total current expenditures is spent on administration salary and benefits. This leaves 17.5% of total current expenditures spent on other administrative costs, which are unspecified in the financial survey. The information in the federal data set does not contain details to

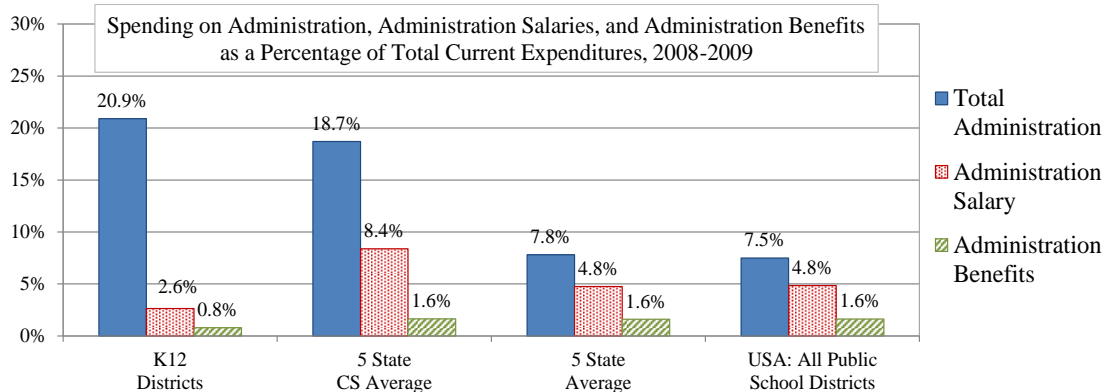


Figure 8. Spending on Administration as a Percentage of Total Current Expenditures, 2008-09

explain this anomaly. Our assumption is that extensive spending on administration is accounted for by management fees and contracts for services provided for by K12's central corporate offices.

Spending on operations. The final category of total current expenditures is Operations. Operations includes spending for the operation of buildings, the care and upkeep of grounds and equipment, vehicle operation, student transportation, food services, maintenance, security, and enterprise operations (activities financed at least in part by user charges, for example). Because K12 operates virtual schools and not schools with actual physical facilities, it is not surprising that K12 spends considerably less per pupil (\$359) on operations than any other comparison group.

The Operations category is further broken down into categories of (1) operation and maintenance of plant, (2) student transportation, (3) other support services,⁴⁴ (4) food services, and (5) enterprise operations. None of the K12 schools devoted resources to food services, enterprise operations, or other support services and only the Idaho Virtual School reported devoting resources for transportation. The K12 schools did report very small amounts of resources devoted to operation and maintenance of facilities. Appendix B has specific expenditure figures across these variables for each of the K12 schools in our analyses.

Spending on salaries. Figure 9 describes the patterns of spending on key categories of salaries (i.e. regular education, special education, and administration in per-pupil dollars). Compared to the national average (\$2,219), the five states' average (\$2,778), or the states' charter school average (\$2,717), K12 spends less than half the per-pupil dollars for regular education salaries (\$1,054).

Even though K12 schools enrolled around 4% fewer students with disabilities in 2008-09, K12 schools spend around one-third as much on special education salaries per pupil (\$182) compared to the states in which these schools are located (\$574). Based on special

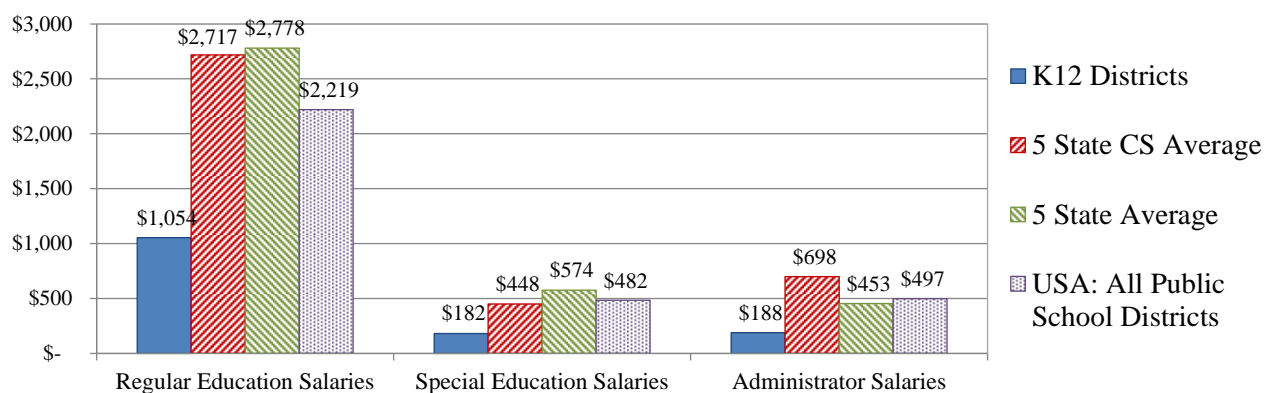


Figure 9. Per-Pupil Expenditures for Salaries, 2008-09

education enrollments in 2008,⁴⁵ K12 schools enrolled a similar percentage of students with disabilities as average charter schools. Still, K12 spent less than half per pupil on special education teacher salaries compared to brick-and-mortar charter schools (\$448). Similarly, K12 spends less than half per pupil on administrator salaries than the national average, five state average, or five state charter school average (\$188 compared to \$497, \$453, and \$698, respectively).

Because K12 receives less in total public revenue, it logically should spend less on salaries and other costs. In order to examine the relevant amount that K12 devotes to salaries, we also looked at spending on salaries as a percent of total current expenditures (TCE) (see Figure 10). Even though K12's TCE is less than any other comparison group, per-pupil spending on regular education salaries, special education salaries, and administrator salaries still comprise a smaller proportion of spending for K12 schools than any other comparison group. This means that K12 spends less in actual dollars for diverse categories of salary, and it also devotes a smaller proportion of its budget to salaries.

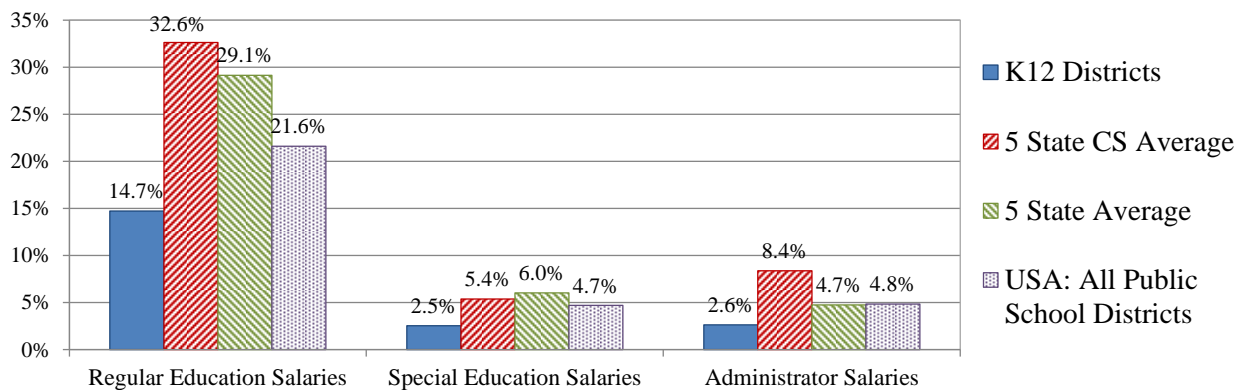


Figure 10. Expenditures on Salaries as a Percent of Total Current Expenditures

Table 4. Per-Pupil Spending on Salaries for K12 and Comparison Groups

Comparison Group (Number of students)	Salaries- Instruction	Salaries- Regular Education	Salaries- Special Education	Salaries- Vocational Education	Salaries - Other Education
USA: All Public School Districts (N=48,979,375)	\$4,253	\$2,219	\$482	\$80	\$117
5 State Average (N=5,413,237)	\$3,821	\$2,778	\$574	\$83	\$76
5 State Charter Average (N=273,343)	\$3,217	\$2,717	\$448	\$4	\$31
K12 Districts (N=21,866)	\$1,306	\$1,054	\$182	\$0	\$0

Note: In some cases, data for instructional salary subgroups reported in the F33 Financial Survey do not add up to the total spent on instructional salaries.

Spending on salaries for instruction. Spending on instructional salaries is split, in the NCES dataset, into four categories: regular education, special education, vocational education, and other educational programs. In Table 4, K12’s spending on these categories of instructional salaries is compared to the national average, the five-state average, and the five state charter school average. Once again, K12 districts spent less per pupil in every salary category compared with all other comparison groups. Across the K12 schools (see Appendix E) there are noticeable variations in spending, particularly spending on special education. The reduced spending for special education salaries could be a result of new cost-effective means of delivering special education services, or it could be due to shortcuts taken to maximize profitability.

Spending on salaries for student support services. Besides instructional salaries, there are a number of other salary indicators in the F33 Financial Survey. The per-pupil spending on these salary indicators is illustrated in Table 5. It is interesting to note the variability among the K12 districts on these indicators. Two K12 schools did not report spending anything on “Salaries for Support Services – Pupils”, which includes salaries for attendance, social work, student accounting, counseling, student appraisal, information, record maintenance, and placement services. This category also includes spending on salaries for medical, dental, nursing, psychological, and speech services (p. E-8). (Arizona Virtual Academy reported spending a small amount on this salary indicator, which rounded to \$0).

Only two K12 schools reported salary spending on “Student support services - instructional staff,” which includes the supervision of instruction service improvements, curriculum development, instructional staff training, academic assessment, and media, library, and instruction-related technology services.

Arkansas Virtual Academies and Ohio Virtual Academy (OVA) reported no spending on “Student support services - general administration” or “school administration” salaries. General administration salaries are those for the board of education and executive administration; school administration salaries include those for the office of principal services.

Table 5. Per-Pupil Spending on Support Services Salary Indicators for K12 and Other Comparison Groups, 2008-09

<i>Comparison Group</i>	<i>Support Services - Pupils</i>	<i>Support Services - Instructional Staff</i>	<i>Support Services - General Admin.</i>	<i>Support Services - School Admin.</i>	<i>Support Services - Operation & Maintenance of Plant</i>	<i>Support Services - Student Transport.</i>	<i>Support Services - Business/Central/Other</i>
USA	\$361	\$291	\$83	\$414	\$363	\$155	\$158
5 State Average	\$331	\$252	\$109	\$343	\$361	\$159	\$146
5 State Charter Ave.	\$215	\$99	\$181	\$517	\$139	\$15	\$327
K12 schools	\$23	\$5	\$131	\$56	\$0	\$0	\$44

None of the K12 schools reported spending on salaries for the operation and maintenance of building services, grounds equipment, vehicle operation, security services, or salaries for student transportation. One district, Pennsylvania Virtual Charter School, reported spending on salaries for business/central/other support services, which includes fiscal services, planning, research, and development, evaluation, information, management services, and expenditures for other support services.

The national averages, five-state averages, and five-state charter school averages on these support services salary categories can be compared to K12’s district averages in Table 5. As with the instructional salaries, K12 schools spend substantially less on support services salary indicators than the other comparison groups. The only exception is “Student support services - general administration” category in which K12 spent more per pupil than 2 of the comparison groups. Although three of the six K12 districts reported spending \$0 on general administration salaries, PAVCS reported spending a substantial amount (\$581 per pupil), which raised the K12 district average (\$131 per pupil) above the national average (\$83 per pupil) and the five state average (\$109 per pupil). However, K12’s spending on general administration is less than the five state charter district average (\$181 per pupil) for spending on “Support services - general administration.”

Spending on employee benefits. The F33 financial survey includes a break out of employee benefits very similar to that of salaries. In general, those K12 schools that reported salary spending in a particular category also reported benefits in that same category. The employee benefits for instruction at every K12 district constitute a majority of spending on benefits. For five of the six K12 schools, over 85% of spending on employee benefits was reported in the instruction category.⁴⁶

The national average, five-state average, and five-state charter district average on benefits categories can be compared to K12’s spending on benefits in Table 6. Similar to the salary data, K12 spends much less on benefits for instruction and support services than the comparison groups. Once again, the only category of spending for which K12 is similar to comparison groups is for benefits for the general administration.

Table 6. Per-Pupil Spending on Employee Benefits, 2008-09

<i>Comparison Group</i>	<i>Total Employee Benefits</i>	<i>Benefits - Instruction</i>	<i>Support Services - Pupils</i>	<i>Support Services - Instructional Staff</i>	<i>Support Services - General Admin.</i>	<i>Support Services - School Admin.</i>	<i>Support Services - Business/Central/Other</i>
USA	\$2,205	\$1,421	\$115	\$93	\$31	\$134	\$65
5 State Average	\$1,880	\$1,222	\$104	\$90	\$37	\$115	\$55
5 State Charter Ave.	\$881	\$628	\$33	\$22	\$44	\$92	\$25
K12 Schools	\$491	\$416	\$6	\$1	\$35	\$21	\$13

It is important to note that the subcategories in Table 6 do not add up to the total spending on benefits. This is because four additional areas to which schools can devote salaries and benefits are not included in the table: (i) operation and maintenance of plant, (ii) student transportation, (iii) food services, and (iv) enterprise operations. These four categories were left out of Table 6, since the K12 schools did not report any spending on benefits in these categories.

Cost Advantages and Disadvantages for Full-Time Virtual Schools

Although K12's schools receive less in public revenues than brick-and-mortar schools, these full-time virtual schools have considerable cost advantages that explain or justify differences in amount of public monies received. In this section, we present and explain some of the general costs advantages of the virtual school model and others that—based on our analysis of expenditures—appear to be specifically present in the case of K12 Inc. We then present and explain some likely cost disadvantages. First, the advantages:

- Full-time virtual schools save on “Operations” expenses, including facilities, maintenance, transportation, and food services. Although there is a need for some infrastructure for corporate and central office staff, virtual school teachers and students largely work from home, thus saving on office space for instructors and classroom (and other school) space for students. The virtual school model results in considerable spending reductions in terms of facilities for instruction, furniture, and equipment. Only one of the K12 schools reported transportation costs, and this was a fraction of what districts spend per pupil on transportation. Districts and some charter schools have food preparation costs as well as costs associated with dining facilities and supervision of students during meals that must be considered, and this is an area where full-time virtual schools spend nothing. In terms of spending on operations, we found that K12 schools had a spending advantage of *\$1,894 per pupil* relative to the comparison states.
- K12 saves on student support services. Although reduced spending for student support services is not inherent in the virtual school model, this was clearly the case for K12 schools. Given that K12 indicates that its schools are now serving more “at-risk” students, it is likely that additional spending in this category will be required. But based on our analysis of spending for student support services, K12 had an advantage of *\$715 per pupil*.
- K12 saves on teachers' salaries. Compared with charter and district schools, K12 spends considerably less for all categories of staff typically found at building or district levels. Savings such as these are achieved by having more students per employee or having employees work for lower salaries. The instructional costs are effectively passed on to the families, since parents need to oversee and sometimes tutor and provide direct instruction for students.⁴⁷ Based on our analysis, the K12

schools had a spending advantage for teachers that was equivalent to *\$1,165 per pupil* compared to the states in which K12 operated schools.

- K12 spends considerably less on benefits for its employees. In terms of benefits for all categories of staff, K12 had a spending advantage of *\$1,250 per pupil* relative to the comparison states.
- K12 saves on reduced services or spending for children with disabilities. Even though K12 schools enroll students with disabilities at rates approaching conventional public schools, it spends substantially less on special education. Moreover, those students with disabilities who are enrolled in charter schools tend to have mild and less-costly-to-remediate disabilities.⁴⁸ While public schools receive special education funds from state and federal sources, that funding seldom covers all the costs incurred; districts thus must cover additional special education costs as part of their current operating expenses.⁴⁹ Based on our financial estimates, K12 has a spending advantage of at least \$500 per pupil when it comes to special education salaries and other special education related costs (this excludes benefits for special education teachers, since the benefits category was itemized separately above).
- Lower overall spending on employees also may stem from lesser services. Unlike many traditional public schools, charter schools as well as virtual schools are not obligated to provide such additional services as adult education or vocational education. Salary data indicated that K12 has few staff working in other programs and services outside of regular instruction. However, because we are not able to accurately compare programs and services, we have not reported the large cost savings that K12 schools are believed to have in terms of delivering reduced levels of programs.
- District schools often struggle to maintain cost-efficient arrangements that match students with existing facilities and instructors. For instance, in a school choice context, a district may discover, as fall approaches, that a school with a capacity for 30 teachers and 700 students has enrolled only 500 students, requiring some last-minute scrambling and a situation with classes in each building that do not optimally match students to teachers.. Full-time virtual schools can more readily move and group students to match them cost-efficiently with instructors. The corresponding struggle for virtual schools concerns attrition – discussed later – which can result in a greater need for instructional staffing in the fall than in the spring.
- While charter schools tend to be small and lack the economies of scale found in conventional school districts, K12 and other large operators of full-time virtual schools are able to adjust staffing and distribute costs for specialists or administrators over a larger number of students.

- Enrollments in K12 schools are more concentrated at the elementary and lower secondary levels. For brick-and-mortar schools, at least, per-pupil costs in these grades are lower than in the upper secondary grades.⁵⁰
- K12 schools also have considerably fewer students classified as English Language Learners and fewer English-speaking students with special education needs. These students tend to require additional resources.
- In most states, full-time virtual schools appear to be able to retain funds for students that leave after autumn head count (typically four weeks into the school year). In these states, when students leave a school after the autumn head count, the funding allocated to the school remains for the school year, even though the students who left return to another school or to a homeschool arrangement. Traditional public schools do not typically benefit from such mobility, since they are required to admit students at any time during the school year, meaning that places vacated are then filled by other mobile students (including those leaving charter schools and virtual schools). It is necessary to understand the scope, direction, and timing of student mobility to understand the extent to which companies like K12 can benefit from such a process. One study from Colorado indicated that half of the online students left their schools within a year; this pattern continued for three years.⁵¹ This raises an empirical question: To what extent do K12 and other full-time virtual schools enroll new, mobile students mid-year even though no state funding comes with those transferring students? While accepting those transfers may provide a service, the business incentives for these (generally) for-profit companies would counsel against it.

The examples presented above serve as illustrations of obvious cost advantages for K12 schools. Below we list what we believe are likely cost disadvantages for full-time virtual schools.

- Although it is not easy to determine from our financial analysis how—or on what—K12 schools are spending their instruction-related costs, we can see from some of the literature that full-time virtual schools spend more on computers and software for students. Most virtual schools loan a computer to each student enrolled, and many of these schools also pay for monthly expenses for Internet service providers. Our analysis showed that K12 was spending more on instruction than comparison groups, but less on instructional salaries and benefits. Based on findings from the Fordham Institute study, computer and Internet subsidies plus extra hardware for teachers cost an estimated \$1,200 per pupil. Even though some of these expenses may be distributed across two or more years, relative to spending by district in these same areas, we estimate that K12 schools have a spending disadvantage in this area of *approximately \$950 per pupil*.
- Full-time virtual schools spend more on their learning platform and the development and acquisition of content. These schools also spend more on the development and maintenance of their websites compared to brick-and-mortar

schools. The Fordham Institute study reported that spending for content acquisition, which includes the content-management system or learning platform, costs an estimated \$800 per pupil. Traditional public schools also have costs in these areas for textbooks, and such, but costs are much lower. We estimate that K12 schools have a cost disadvantage of *about \$450 per pupil*.

- Either the full-time virtual school or the company it contracts with for curriculum must invest more resources for the development of the curriculum. These costs are high in the start-up phase but should be reduced over time and as such expenses are distributed across more schools.
- Full-time virtual schools have to spend much more on office equipment and computers for each staff member, although these schools have considerably fewer staff per pupil relative to brick-and-mortar schools. We assume that spending in this category is accounted for by the “operations” related costs reported by K12.
- Full-time virtual schools have to spend more on advertising and recruitment than district schools that already have students assigned to them. Students attracted to virtual schools seem more mobile, which also indicates the need for greater spending on recruitment of students in order to replace all those that are leaving within and between school years. Beyond marketing and recruitment, K12 Inc. and other companies and advocates are spending on lobbying legislators and bureaucrats in order to facilitate the expansion of opportunities into new states and markets.

Our lists of costs advantages or disadvantages underscore how complex and even confusing school finance can be. These lists also indicate how difficult it is to compare two very different school models using a set of variables based on practices from only one of these models. We hope that the detailed findings presented in this report will add clarity to how full-time virtual schools spent public resources and how this differs with brick-and-mortar charter and district schools.

If we sum up the cost advantages and disadvantages for K12 schools in categories for which we can generate estimates, we see that K12 schools have a cost advantage of over \$4,000 per pupil. If we could provide estimates for many of the other cost advantages that K12 and other virtual schools have, we believe that our estimate for cost advantages would likely surpass \$5,000 per pupil in some states. [The greater the state support for virtual schools, the lower would be the cost advantage of such schools in those states.]

School Performance Data

In this section, results from a few key school performance indicators are reviewed, including Adequate Yearly Progress (AYP) status, state ratings, performance on state assessments in reading and math, on-time graduation, and student attrition. The results

across all these measures for the full-time virtual schools operated by K12 are by no means positive. In fact, all of the diverse measures we reviewed indicated a consistent pattern of weak performance.

This report was prompted, in part, by a response from K12 Inc. following the release of the 13th Annual *Profiles of Education Management Organizations* in January 2012.⁵² In our 2012 report, K12 was identified as the nation's largest for-profit EMO in terms of the number of students enrolled.⁵³ Although the annual *EMO Profiles* reports are largely statistical digests with information on numbers of schools and enrollments of private EMOs, over the past couple years, we have begun to report some common measures of school performance, such as whether or not schools were meeting NCLB's AYP targets, and—where available—state ratings for school performance. As we reported, the performance ratings for K12 and other private EMOs that operated full-time virtual schools were markedly lower than ratings for brick-and-mortar charter schools and traditional district schools. K12 criticized the findings in the 2012 *EMO Profiles* report and followed up this criticism with a report of its own that was released in April 2012.⁵⁴ In particular, K12 attacked our use of AYP targets. Because we agree that this criterion has limited usefulness (as noted in the *EMO Profiles* report itself and as discussed below), we wanted to expand our analysis.

Adequate Yearly Progress and State Ratings Assigned to K12 Schools

In our last two annual Profiles of EMOs,⁵⁵ we included data on AYP and school performance ratings assigned by states. Although these are weak and flawed measures, they provide a descriptive indicator of school performance that can be aggregated across states. Essentially, AYP indicates whether any given public school meets its respective state standards. As we have consistently explained when discussing school performance measures, AYP is a relatively crude indicator of whether or not schools are meeting state standards. One should be cautious in drawing conclusions from such a school performance measure, and one should be cautious in interpreting differences among groups of schools. At the same time, we argue that extremely large differences such as the 25 percentage point difference between virtual schools and brick-and-mortar schools which has been observed over the past two years of data warrants further attention rather than excuses. Given the rapid growth of full-time virtual schools, it is critical that we understand why so few virtual schools are able to meet state standards.

While the performance of K12 schools on the AYP measure is poor, it is important to note that other EMOs that operate virtual schools have similarly weak performance levels, as illustrated in Figure 11. In our 13th Annual Profiles of EMOs released in January 2012,⁵⁶ we reported that 33% of the K12 schools met AYP in 2010-11. Since the release of that report, there are now more AYP ratings available for K12 schools and we have adjusted the AYP rate for K12 schools downwards to 27.7% which is almost identical to the average for all EMO-operated virtual schools (27.4%).

As a point of comparison, it is estimated that only 52% of all public schools (district and charter schools) in the U.S. met AYP during the 2010-11 school year.⁵⁷ The AYP ratings for virtual schools managed by EMOs were substantially weaker than the ratings for the brick-and-mortar schools. While only 27.4% of the virtual schools met AYP, 51.1% of the brick-and-mortar schools operated by EMOs met AYP. In the previous year, 30% of the virtual schools operated by EMOs met AYP.⁵⁸

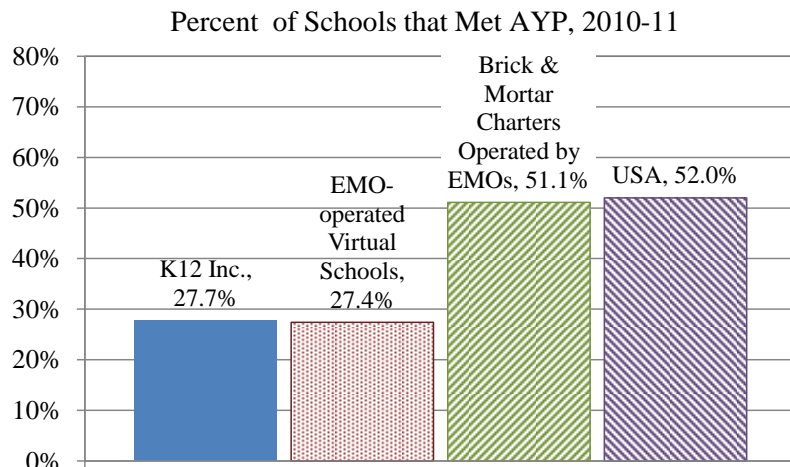


Figure 11. Proportion of Schools Meeting Adequate Yearly Progress, 2010-11

In April 2012, K12 released its own report on the performance of their schools. In that report⁵⁹ the authors share a number of concerns about the relevance and utility of AYP,⁶⁰ which we summarize below:

- AYP is structured to reward schools that have small, stable, and/or homogenous populations, i.e., traditional suburban schools.
- AYP is not structured to reward growth.
- AYP is an annual “snapshot in time” look at student performance, thus favoring schools with steady populations.
- AYP is a binary model being used to interpret something very complex—namely student learning and the effectiveness of a school in helping students achieve that learning.

We find little here to disagree with. At the same time, we recognize that these measures are used to hold all public schools accountable, and they are used to determine whether corrective or punitive action needs to be taken for schools that do not meet their respective state standards.

After seeing the surprisingly low AYP ratings for K12 and other virtual schools, and after noticing that these schools did not appear to serve more disadvantaged students than local district schools, we hypothesized that K12 schools may not be meeting AYP due to falling short of the test-taking rate mandated by NCLB. Schools must have, pursuant to NCLB, at least 95% of the students completing the test (in any grade with a required state assessment). Two characteristics of full-time virtual schools may make this a difficult

obstacle: (1) attrition, with a large portion of the students enrolled in the fall no longer attending in the spring;⁶¹ and (2) the challenge of getting all students to come to a common test site for the state assessment.

We tested this hypothesis by reviewing available data and information from state education agencies related to the specific reasons for why K12 schools are not meeting AYP. In summary, we did find that in a number of cases, the K12 schools did not have a sufficient number of test takers to meet NCLB's AYP requirements. At the same time, we found that in all but a few cases, the insufficient proportion of the students taking the test still did not meet state standards. In Appendix C we present a table that indicates whether or not each K12 school met AYP and the reasons cited by state authorities for why 73% of the K12 schools did not meet AYP in 2010-11.

In addition to AYP data, we have reviewed the state ratings assigned to each of the K12 schools (these are also included in Appendix C). A total of 36 of the schools were assigned some form of state rating for the 2010-11 school year. The state rating categories vary considerably; some assign letter grades and other specify whether or not the school is in corrective action and which year or phase of corrective action. In many cases, the state ratings are based on a variety of measures, and in some states this includes gain scores of students who remain in the school for a year or more. Of the 36 K12 Inc. schools that had been assigned a school rating by state education authorities, only seven (19.4%) of these schools had ratings that clearly indicated satisfactory status.

Performance on State Reading and Math Assessments, Grades 3-11

In addition to AYP, which has stringent cuts-offs designating whether or not a school has met state standards on each of the grade and subject level assessments, we also looked at the overall or mean performance of the K12 schools on state reading and math assessments and compared this to average state performance. Mean performance refers to the percent of students that meet or exceed state standards. The mean scores reported in Figures 12 and 13 represent weighted averages for all K12 Inc. schools that reported both test data and the number of students per grade. We required data on the number of students per grade or the number of actual test takers, since this was used to calculate a weighted average. A weighted average was also calculated for each state that had a K12 school within its boundaries. Appendix D contains details on the actual scores of each K12 school. Not all states and K12 schools had assessment data for all grades, so there are some fluctuations in the number of K12 schools and the number of states considered in each weighted average. These details also are available in Appendix D.

Across grades 3-11, the K12 schools were between 5 and 12 percentage points behind the state average in reading (see Figure 12). In other words, K12 schools, on average, have consistently a lower proportion of their students meeting or exceeding state standards in reading.

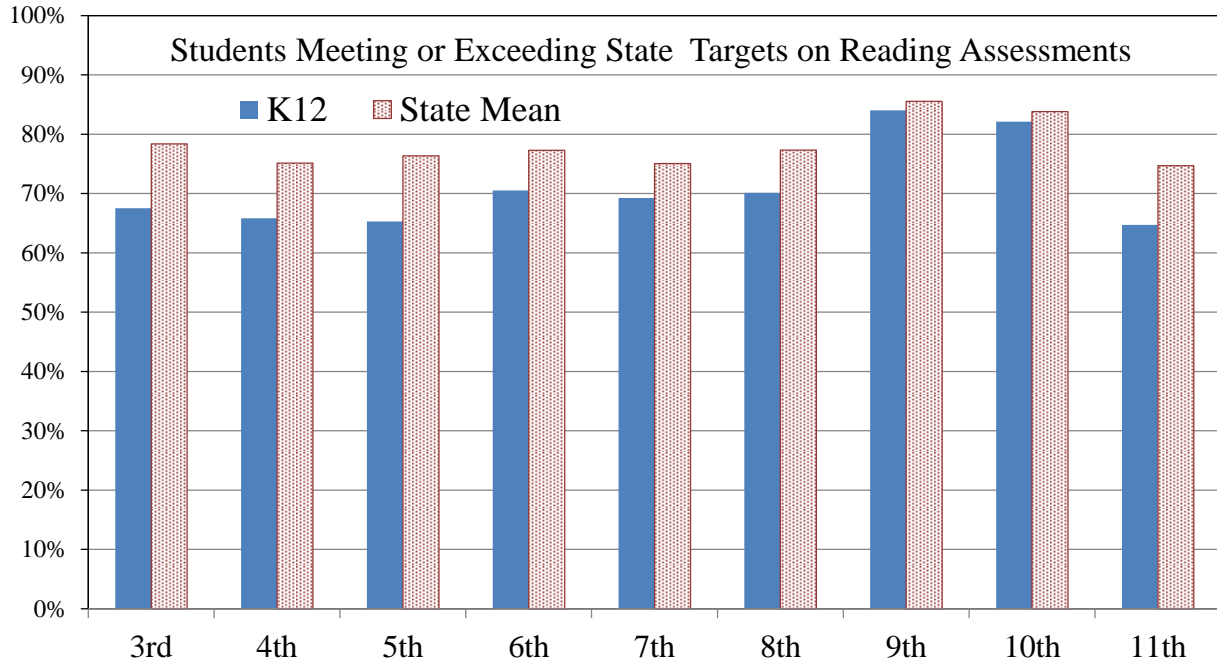


Figure 12. Proportion of Students Meeting State Standards in Reading by Grade, 2010-11

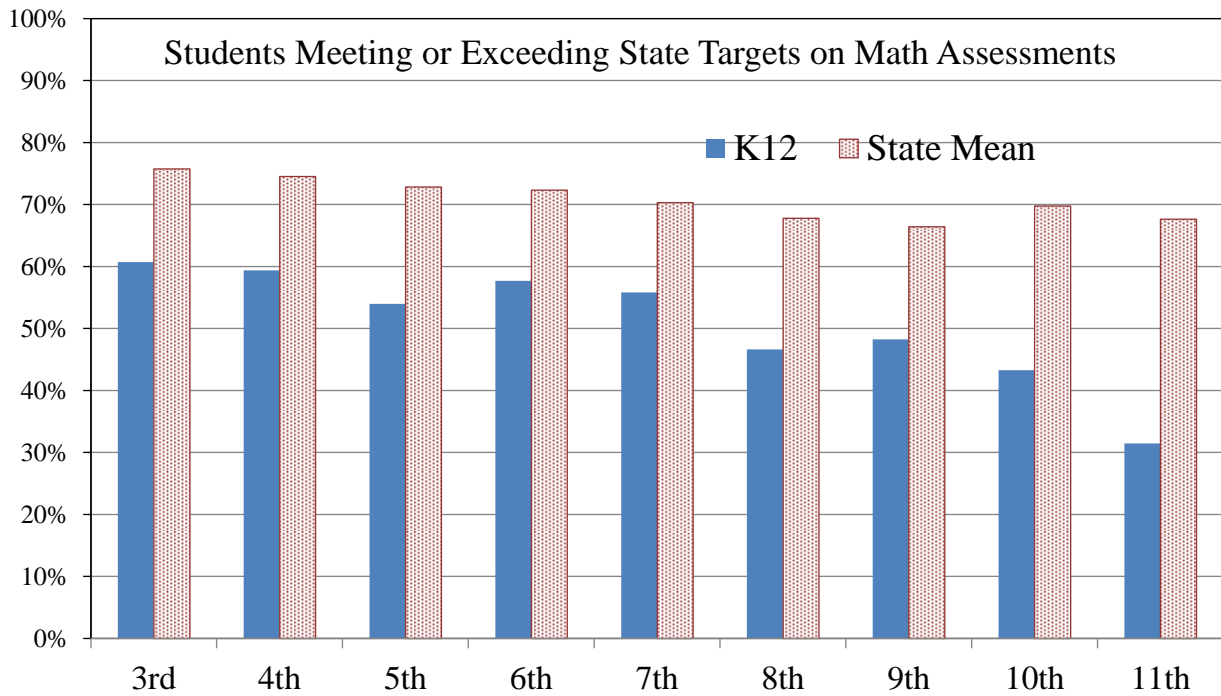


Figure 13. Proportion of Students Meeting State Standards in Math by Grade, 2010-11

As can be seen in Figure 13, the gap between K12 schools and the states is substantially larger for math than it was for reading. Also noteworthy is that this gap in performance

The mean performance of K12 schools on state reading and math assessments reveals that these virtual schools consistently lag behind performance levels of the states from which the schools draw their students.

increases dramatically over the grades. In grade 3 the gap in math performance is 14 percentage points, and in grade 11, it rises to almost 35 percentage points. These especially weak results in math constitute a finding that was apparent in other studies or audits of virtual schools.⁶²

The review of mean scores across schools provides a better—albeit still far from perfect—measure of school performance. The mean performance of K12 schools on state reading and math assessments reveals that these virtual schools consistently lag behind performance levels of the states from which the schools draw their students.

Graduation Rates

The manner in which schools and states record and report graduation rates has become more standardized in recent years. The measure in wide use today is “On-Time Graduation Rate,” which refers to the percentage of all students who graduate from high school within four years after they started 9th grade. The numerator is all high school students who graduated with a high school diploma within four years of starting 9th grade. The denominator is the total cohort size starting 9th grade four years prior to graduation (for our analyses we are looking at 2006-07 to 2010-11). There were 18 K12 schools that had a score related to on-time graduation rate in 2010-11. We weighted the data based on the total number of students enrolled in the high school grades in each of the schools for which

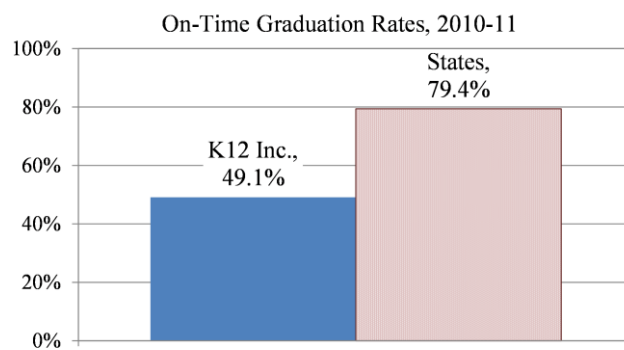


Figure 14. On-Time Graduation Rates for K12 Schools and Host States

Note. These figures are represented weighted averages from 18 K12 schools and 15 states that had K12 schools within their boundaries.

there was a graduation rate. As Figure 14 illustrates, the on-time graduation rates for the K12 schools is just below 50%. The weighted mean for the states was 79.4%.

It is important to note that the low graduation rate for schools operated by K12 Inc. is likely to be closely related to—and impacted by—student attrition, which is considerably elevated in full-time virtual schools.

By itself, the graduation rate is insufficient in order to hold the schools accountable. However, this is an important outcome measure and helps to complete the overall picture of school performance.

Student Attrition

Virtual schools are choice schools; therefore, they should be keen to attract and retain students. In fact, advocates of school choice emphasize the importance of measures related to market accountability such as ability to attract and retain customers. For this reason, student attrition in virtual schools could be considered a supplemental measure of school performance. We do have concerns, however, that attrition rates may be inherently higher in full-time virtual schools and that this may not even be a disadvantage. The key question is whether these schools are providing a service to a mobile or transient population or whether it is driving transiency where it otherwise might not exist.

Because of the ease with which students can be enrolled and disengage, parents and students may seek out full-time virtual schools as a place to “park” for a short period of time because of, for instance, family mobility or the temporary lack of a desirable brick-and-mortar option. In those instances, the virtual school is providing a service. In other instances, however, parents and students may be drawn into an ill-fitting option by persuasive television advertisements and may not discover their error until after enrollment. Or parents and students may leave a virtual school simply because they consider it to be of poor quality. In those latter instances, the virtual school may be doing harm, not providing a service. Empirical evidence concerning the exact nature of the apparently large attrition rates at these schools is necessary if researchers and policymakers are to tease out what those rates really mean.

The federal data sets did not have a common variable for student attrition, and states tend to identify or report attrition or student mobility in ways that differ greatly. For this reason, we could not obtain comparable results from a common public source. Instead, we reviewed results from evaluations and state audits of full-time virtual schools. From this evidence it was clear that, regardless of whether the virtual school was operated by a for-profit EMO or a district, there were likely to be high levels of student attrition.⁶³

We also considered evidence provided by K12 in its publicly available report on school performance that was released in April 2012.⁶⁴ In that report, K12 noted that its enrollment applications indicated that 31% of the parents intended to keep their students

enrolled for one year or less and more than half intended to keep their students enrolled for two years or fewer. In this report, K12 also noted that 23% of its current students were enrolled for less than a year and 67% had been enrolled for fewer than two years. These findings suggest that many families do in fact approach the virtual schools as a temporary service.

Discussion and Conclusion

In this final section, we first summarize evidence specific to each of our research questions. Next we explore and discuss a number of possible explanations for the generally weak performance of K12 schools on common measures of school performance. This study has generated a number of new research questions related to full-time virtual schools and to K12 Inc., and these questions are listed in this section. Finally, we present a set of recommendations for policymakers that should apply to K12 Inc. and other providers of full-time virtual schools.

Answering our Research Questions

What are the characteristics of the students enrolled in K12 schools, and how does this differ from state averages?

K12 serves more white students (75.1% for K12 compared with 54.7% for comparison states) and fewer Hispanic students (9.8% for K12 compared with 27.6% for comparison states). On average, K12 schools have 7.3 percentage points fewer students qualifying for free and reduced-price lunch. Close to one in 10 students enrolled in a K12 school have a diagnosed disability, which is only a few percentage points lower than the same-state comparison group and 3.5 percentage points lower than the national average for public schools. Only 0.3% of K12 students are classified as English language learners, compared with 13.8% of the same-state comparison group. K12 serves student at all grade levels, but has a higher concentration of students in the middle school grades, and the mean enrollments by grade drop considerably after grade 8.

How does the amount and source of public revenue for K12 schools differ from other charter schools and district schools?

K12 schools receive on average \$7,393 per pupil during the 2008-09 school year. This is approximately 36% lower than district schools in the same states as K12 has schools, and 20% lower than charter schools in these same states.

How do the patterns of expenditure for schools operated by K12 differ from other charter and district schools?

K12 schools spend more on overall instruction, but substantially less on salaries and benefits for instructional staff, which are typically the largest component of instruction spending. Similarly, K12 schools spend a higher proportion of their total current expenditures on administration, but considerably less on administrator salaries and benefits. As expected, K12 spends little or nothing on items such as facilities and maintenance, transportation, and food services. K12 also spends relatively little for supplemental programs and an array of activities and services that fall under the category of Student Support Services. Although K12 enrolls students with disabilities at rates only moderately below public school averages, it spends half as much as charter schools on special education instruction and a quarter of what districts spend on special education instruction.

What are the reasons for K12's very low proportion of schools meeting Adequate Yearly Progress targets?

Only 27.7% of K12 schools met AYP targets in 2010-11. This can be compared with an estimated 52% of all public schools in the country that met AYP in the same year. The majority of the K12 schools did not meet AYP because one or more groups of students did not meet the state target on either the math or reading assessments. Also, in some cases, K12 did not meet the participation target, which requires that at least 95% of the students in a given grade take the state assessments in math and reading. So we know that the immediate reasons for this failure were simply low test scores. Later in this section, we offer some thoughts as to why this may be happening.

What is the performance of K12's schools relative to state averages for all public schools in terms of the proportion of students meeting state standards. What is the performance of K12's schools as shown in graduation rates and performance ratings assigned to schools by state education authorities?

As just noted, only 27.7% of K12 schools met AYP in 2010-11. This is similar to other full-time virtual schools operated by EMOs (27.4% met AYP). Thirty-six of the 48 K12 schools were assigned school performance ratings by state education authorities, and only seven schools (19.4%) had ratings that clearly indicated satisfactory progress.

K12 schools consistently had fewer students meeting state targets on assessments in reading and math. Across grades 3 to 11, the K12 schools were between 5 and 12 percentage points behind the state average in reading. K12 schools lagged further behind in math, and this gap increased in higher grades. In grade 3, K12 schools were 14 percentage points lower than state averages in math, and by 11th grade this gap increased to 35 percentage points.

The K12 schools that served high school grades had a 49.1% on-time graduation rate, compared with 79.4% for the comparison states.

What lessons can be learned from this analysis of K12 Inc. that could inform overall policy for full-time virtual schools?

Further below in this section, we outline recommendations specific to state policymakers and other actors that authorize and oversee full-time virtual schools.

Possible Explanations for Poor Performance of K12 Schools

There are a number of possible reasons for the relatively poor performance of full-time virtual schools on common measures of school performance. We explore and discuss some of these possibilities below.

Commonly used school performance measures do not adequately apply to full-time virtual schools. K12 maintains that commonly used school performance measures do not adequately apply to virtual schools, since they have high levels of student mobility. This argument has some merit and is comparable to similar obstacles faced by large urban districts. As applied to full-time virtual schools, this raises an important empirical research question: Are these schools simply enrolling students who would be mobile in any case, or are the schools contributing to the mobility – increasing the given state’s overall levels of student mobility?

Insufficient funds. Another possible explanation for the weak performance is that there are insufficient funds allocated for these schools. Our analyses found K12’s virtual schools receive fewer revenues on average than brick-and-mortar charter schools and district schools, although K12 schools (and other virtual schools) have a number of cost advantages that justify the differences in revenues. A more in-depth analysis of the true costs of educating students in full-time virtual schools is required to better understand if insufficient revenue is indeed the cause of poor performance.

It is relevant to note that K12 Inc. shares positive news with investors about the profitability of the company and announced in May 2012 that it seeks to “increase profitability in fiscal year 2013” by implementing as much as \$20 million in costs savings. K12 argues that these cuts can be made “without any adverse effects on student performance, employee retention, customer satisfaction, or our growth rate.”⁶⁵ Such statements by K12 suggest that it believes that weaknesses in performance are not due to insufficient revenues or cannot be addressed with additional resources. An alternative explanation is that the company chooses not to address them to protect profits.

Our analysis of cost advantages and disadvantages suggests that K12 has a typical cost advantage of between \$4,000 and \$5,000 per pupil. This amount is in line with the actual difference in mean revenues per pupil between K12 schools and public schools in the states in which K12 operates. (K12 was receiving \$4,300 less per pupil in public revenues than the average for all schools in the states in which K12 operated.)

Inadequate or misaligned curriculum may also explain the troubling performance of these schools. This hypothesis was not explored in this study.⁶⁶

Inadequate or insufficient instruction. A fourth possible explanation for the weak performance relates to inadequate or insufficient instruction and this possibility is considered in our report in terms of two factors: student-teacher ratios and overall spending for salaries for various types of teachers and staff in the schools. Although the teacher-student ratios reported by K12 schools vary considerably, the average across K12 schools, when weighted by student enrollment, showed that there were 61.4 students for each full-time equivalent teacher.⁶⁷ For the states in which K12 has schools, there were 16.9 students for each teacher in conventional schools.

Because K12 has more than three times the number of students per teacher relative to traditional or charter brick-and-mortar public schools, the higher student-teacher ratio may help explain the poor performance of its schools. This also appears to be the key explanation for reduced per-pupil spending on instruction. Given the evidence available to us, however, it is not possible to discern whether K12 teachers have relatively lower or higher salaries and benefits compared with charter or district schools.

As our evidence indicates, K12 is enrolling and serving an increasing number of students with disabilities and students that it classifies as “at-risk” (K12 uses this designation because they are already behind grade level expectations when they arrive).⁶⁸ Schools serving more students with disabilities qualify for additional funding.⁶⁹ Using the most recent available data, close to 10% of K12’s students have disabilities, while three years ago we estimated that only 6% of students enrolled in K12 schools had disabilities. In the area of special education, particularly special education teacher salaries, we found that K12 spent less than half of what charter schools spend on special education and a third of what district schools spend. Given K12’s performance problems and given its enrollment of increasing numbers of students with special needs and those needing remedial instruction, it would seem that K12 should be increasing spending on payroll for special education instructors and on student support services. K12’s current comparatively lower spending in these areas may also help explain the schools’ poor performance and even its high student attrition rates.

As our findings revealed, in addition to devoting fewer resources to instructional staff, K12 devotes few if any resources to other categories of staff that are typical in traditional schools, including staff involved with Student Support Services. Our findings showed that K12 has been spending considerably less than comparison schools on salaries and benefits, but we could not clearly determine where or how “instructional-related costs” were being spent, since the sub-categories of expenditures available in the federal finance dataset did not capture this. We believe that K12 was devoting a large portion of its instruction-related expenses for computers, software, and Internet access to students as well as online curriculum and the learning platform, all of which are provided by the company.

If weak or inadequate instruction helps to explain the poor performance of K12 schools, one would also expect to see worse outcomes for math as compared to reading, since reading tends to be more readily influenced by home-background factors while math—especially the advanced math that students take in upper grades—is more heavily dependent on outside instructors. That is, many parent with students in virtual schools can

help their children with math at the primary level, but they are less likely to be able to instruct their children in the advanced math students encounter in the upper grades. Here the school-based instruction is increasingly important, and it is indeed in these upper grades that we see the performance of K12 schools in math plummet compared to state performance levels. This finding was also apparent in other studies of virtual schools.⁷⁰

Poor fit. Finally, we note the issue of ‘fit.’ Full-time virtual schools may have the potential to provide a strong learning environment for some students but not others. Learning styles and resources within a home will differ from student to student. That possibility is not explored in this study, but it presents an important empirical question for later research as well as an important policy question concerning, for instance, the sorts of advertising being used to draw new enrollees into full-time virtual schools.

Recommendations for Policymakers

Although researchers have already provided information and advice on policy issues related to virtual schools (see for example, the work of Huerta, González, & d’Entremont [2006]; Barbour & Reeves [2009]; and Glass & Welner [2011]⁷¹), decisions taken thus far to open state markets for virtual schools or to lift caps on virtual schools have, we believe, been largely driven by extensive lobbying and special interests, rather than evidence. Now, based on the findings from K12’s own school performance report and the findings in this report, we believe there is a much greater understanding of the relatively poor performance of virtual schools, particularly those operated by K12. This information and these insights can help guide policymakers as they develop or revise legislation related to full-time virtual schools.⁷² In particular, based on the findings in this report, we include the following policy recommendations.

Slow or put a moratorium on the growth of full-time virtual schools.

In our earlier review of evidence on the effectiveness of full-time virtual schools we found that there was no evidence that indicated that full-time virtual schools outperform brick-and-mortar schools. In fact, studies on full-time virtual schools in the charter school sector have all found the performance of these schools to be lagging substantially behind brick-and-mortar charter schools and district schools. The new findings summarized in this report on AYP and state-assigned school performance measures, on mean performance on state reading and math assessments, and on-time graduate rates, all found that K12 schools were performing at levels far below those of the states in which they operate. While more research is needed on this issue, measures should be taken in the meantime to stop or slow further growth of these schools until we understand why their performance suffers and how this can be remedied.⁷³

Revise performance accountability measures for virtual schools.

Given K12's valid concerns about the relevance and utility of performance measures used to hold virtual schools accountable, it seems prudent to rethink those accountability measures. We agree with K12 that many measures under NCLB do not adequately apply to full-time virtual schools. At the same time, we are not impressed with the alternative evidence that K12 reports in its own report on school performance, since (i) that evidence focuses on a subset of students that are more adapted to online learning; (ii) the comparison groups are not necessarily relevant; and (iii) oversight agencies would be dependent on K12's reporting from its own internal assessment, rather than relying on a common assessment for all public schools handled by a testing company or an organization that reports to the state education agency.⁷⁴

In its own report on the performance of its schools, K12 does an excellent job of arguing why regular measures of school performance do not function well in capturing the performance of its schools. The strongest argument made by K12 is that standard measures of school performance do not work because of the extremely high mobility rates of its students. As K12 argues, a large portion of the students tested have only just arrived at a K12 school, and a large portion will not remain until the next year. This is a good argument for why standard measures of school performance may not be fair to schools like K12 or high poverty urban schools that have high rates of student mobility. At the same time, the elevated rates of student mobility also may serve as an alternative or supplemental measure of school performance related to market accountability. Because K12 embraces school choice and money following the student, and even acknowledging a subset of families that view the schools as a form of 'rest stop' between other schooling options, it is comes with ill grace for that company to argue that high student mobility does not represents a market signal that families and students are not satisfied and are not willing to stay.⁷⁵ Unfortunately, given that many state funding approaches are based on fall student counts, this market signal is dulled by K12's successful efforts to replace students anew each fall either because of the large demand for places in virtual schools or because of its extensive investment in marketing. Student mobility is only one of many alternative or supplemental accountability measures that might be used for full-time virtual schools.

Revise funding formula and financial oversight.

The results from our analysis of revenues and expenditures raise more questions than we initially sought to answer. Funding formulas used to direct public resources to virtual schools need to be rewritten and should reflect attrition issues as well as the actual costs of educating students in virtual environments. Given that we now have two very distinct and different models for delivery of instruction, it seems apparent that a singular funding formula is problematic.

Charter proponents and opponents have aired a wide variety of arguments about whether or not the "marketplace" in which charter and traditional schools compete is a level playing field, based on assumed financial advantages or disadvantages that either type of school experiences. These cost advantages and disadvantages were discussed in our 2010 national study of charter school finance⁷⁶ which found that charter schools received on average around 20% less than district schools in public revenues, but this difference was

largely accounted for with extra spending required by district schools for special education, student support services, and transportation.

A recent study by the Center for Public Education (CPE) concluded that “States need to establish straightforward funding policies based on a clearer understanding of true costs, how the money is distributed, and the impact on local school districts” (p. 2).⁷⁷ As the authors of the CPE study argued, we need to better understand the true costs of educating a student in a full-time virtual school. Having this information will make it easier for policymakers to sensibly suggest revisions to how these schools are funded.

In this regard, consider Florida Virtual School (FLVS), which serves as a national model for virtual instruction. FLVS is driven by a performance-based funding model. Rather than receive funding based on all students that enroll or decide to try out virtual schools, FLVS only receives funding for students who successfully complete courses.⁷⁸

Consider also the work of Huerta, González, and d’Entremont (2006),⁷⁹ who outlined key policy issues that deserved attention. Among the issues they highlighted were the need for differential funding associated with online learning models that have lower costs, new accountability measures that could account for and define adequate instructional time, and improved reporting of how per-pupil payments are linked to services provided. Six years later, these and other policy recommendations raised by scholars⁸⁰ have been largely left unaddressed by legislators. We believe the findings in this report support the earlier suggestion by researchers that policymakers revise how virtual schools are funded.

In addition to revising funding mechanisms, it is necessary to improve oversight of school finance for this new model of schooling. As this study reveals, common categories and variables used to organize and classify school expenditures are not easily applied to full-time virtual schools, where more is spent on contracts for curriculum and learning platforms than for actual instructors, and where more is paid for administration but less is spent on salaries and benefits for school administrators. Our analysis of expenditure variables from a federal school district finance dataset could not fully explain how K12 was spending its public revenues; what we could determine from these data, however, was what K12 was not spending on.

Questions for Future Research

Our study has raised more questions than we initially sought to answer. A list of questions for future research is included in below.

- Do K12 and other providers of full-time virtual schools admit students after the autumn head count? If so, what are the policies and practices concerning how these providers fill places?
- Why are Hispanics and students classified as English language learners so much less likely to enroll in full-time virtual schools?

- How does K12 serve students with disabilities in a virtual environment? If K12 is not spending on special education teacher salaries, how is it spending the revenues it receives for children with disabilities?
- Among the students with special needs who enroll in K12 and other providers of full-time virtual schooling, what is the breakdown in terms of special education categories and intensity of needs?
- What are the actual or true per pupil costs for educating students in a full-time virtual school environment? How do the costs change from the initial start-up year of a new virtual school compared to the costs for an established full-time virtual school?
- What are the per pupil costs for the proprietary curriculum, and what are the per pupil cost for access to learning platforms?
- K12 spends more on administration than comparison groups although most of the administration expenses are unspecified, and only a small portion of the administration spending is devoted to salaries and benefits for administrators. How does K12 spend its resources for administration?
- What is the overall demand for places in full-time virtual schools? Is it likely that K12 and other providers may have to work harder to retain these students in the future or can these providers continue to rely on replacement to maintain their enrollment levels?
- How are brick-and-mortar district or charter schools impacted by full-time virtual schools?⁸¹
- Does enrollment in K12 and other providers of full-time virtual schooling fit well with the possible enrollees? Which students are best served by these schools, and are they the ones who are enrolling? What are the characteristics of students and their families, that enroll in full-time virtual schools and that perform well or poorly in those schools?
- In addition to this study, several other audits and evaluations found that students in full-time virtual schools were behind in math and reading, although students were further behind in math and this gap widened over the grades. Why do students in full-time virtual schools lose more ground in math than in reading relative to comparison groups? Is this because math instruction is more difficult in an on-line environment, is it because this model relies more heavily on parents as instructors, and as math becomes more complex and difficult, parents are less able to guide and support their children, or is it for some other reason?
- How do providers of full-time virtual schools staff their schools? What are the background characteristics and qualifications of teachers in full-time virtual schools? How are teachers prepared to work in an online environment?

- Is the curriculum used by K12 Inc. adequate and properly aligned with state standards? Does K12 modify the curriculum for various states? Are the especially weak results in math due to the K12 curriculum, to instruction-related problems, or to something else?
- What are the working conditions of teachers, including numbers of students they work with and the amount of time they devote to group instruction and to one-on-one instruction? How do teachers work with parents who oversee or lead instruction?
- What is the actual attrition rate at K12 and other providers of full-time virtual schooling, and what is the breakdown of reasons for this attrition?
- How do K12 and other providers of full-time virtual schooling address the attrition – and the resulting lower numbers of students as the school year progresses – in terms of staffing? Is the teacher-student ratio much higher in the fall than in the spring, do they lay off teachers, or is it handled in some other way?

In addition to these questions, we have included in Appendix F a list of research questions highlighted by a May 2012 review of literature related to online schooling conducted by the Center for Public Education.⁸²

Conclusion

With the rapid expansion of full-time virtual schools, and with the outsized political involvement of key companies that aim to extend market share, the world of online learning is becoming increasingly controversial. Aside from proclamations of politicians and advocates, claims that full-time virtual schools are working are not substantiated by empirical evidence. This report reviewed an array of publicly available performance indicators for schools operated by K12 Inc. and all of these indicators indicate weak performance.

While we share the excitement of new technologies and the potential these have to improve communication, teacher effectiveness, and learning, we remain convinced that policymakers should embrace these schools only after piloting and thoroughly vetting this new model for schooling.

Although this report is modest in scope, we hope that the findings will encourage policymakers to act more cautiously in the political arena, where companies such as K12 Inc. apparently exert considerable influence. Also, we hope this study will cause researchers, educators, and others to look more closely at full-time virtual schools. To truly understand productivity, one needs sound evidence of outcomes and an accurate understanding of inputs such as characteristics of students entering the school, and public monies received and spent by the school.⁸³ Though this report focuses only on a single

provider of virtual schools, it is our hope that its description of evidence from diverse public sources on inputs and outcomes has helped to further our understanding of the potential and limits of full-time virtual schools. We also hope this report can inform policies that will improve this new model of schooling and help to ensure that full-time virtual schools better serve students and the public school system as a whole.

Appendices

Six appendices containing detailed data are available as a separate document:

Appendix A. Demographic Characteristics of Students Enrolled in K12 Schools

Appendix B. Details on Publicly Reported Revenues and Expenditures for K12 Schools

Appendix C. State Performance Ratings, Adequate Yearly Progress Status, and Reasons for Not Meeting AYP

Appendix D. Performance of K12 Schools on State Reading Assessments

Appendix E. Performance of K12 School on State Math Assessments

Appendix F. Questions about Online Learning for Policymakers and School Leaders from the Center for Public Education Study

Notes and References

¹ This is based on statements in K12's third quarter earnings conference call for investors (page 3).

K12 Inc. (2012, May 8). *Q3 2012 K12 Inc. Earnings Conference Call – Final*.

² Glass, G. V & Welner, K. G. (2011). *Online K-12 Schooling in the U.S.: Uncertain Private Ventures in Need of Public Regulation*. Boulder, CO: National Education Policy Center. Retrieved May 15, 2012, from <http://nepc.colorado.edu/publication/online-k-12-schooling>.

³ Barth, P., Hull, J., & St. Andrie, R. (2012). *Searching for the reality of virtual schools*. Alexandria, VA. Center for Public Education, National School Boards Association. Retrieved May 18, 2012, from <http://www.centerforpubliceducation.org/Main-Menu/Organizing-a-school/Searching-for-the-reality-of-virtual-schools-at-a-glance/Searching-for-the-reality-of-virtual-schools-full-report.pdf>.

⁴ In the state of Michigan, legislators recently decided to lift the cap on full-time virtual schools, even though the state was in the second year of a pilot study to see whether these schools work and what could be done to ensure that they work better.

⁵ Vanourek, G. (2006). *A Primer on Virtual Charter Schools: Mapping the Electronic Frontier, Issue Brief #10*. August 2006. Chicago, IL: National Association of Charter School Authorizers. Retrieved on May 7, 2012, from http://www.nasds.org/Portals/o/Documents/Primer_IssueBriefNo10.pdf.

⁶ Watson, J., Murin, A., Vashaw, L., Gemin, B., & Rapp, C. (2011). *Keeping pace with K-12 online learning: A review of state-level policy and practice*. Evergreen, CO: Evergreen Education Group. Retrieved on May 6, 2012, from <http://kpk12.com/cms/wp-content/uploads/KeepingPace2011.pdf>.

⁷ Watson, J., Murin, A., Vashaw, L., Gemin, B., & Rapp, C. (2011). *Keeping pace with K-12 online learning: A review of state-level policy and practice*. Evergreen, CO: Evergreen Education Group. Retrieved on May 6, 2012, from <http://kpk12.com/cms/wp-content/uploads/KeepingPace2011.pdf>.

⁸ Miron, G., Urschel, J.L., Yat Aguilar, M.A, & Dailey, B. (2012). *Profiles of for-profit and nonprofit education management organizations: Thirteenth annual report - 2010-2011*. Boulder, CO: National Education Policy Center. Retrieved [May 17, 2012] from <http://nepc.colorado.edu/publication/EMO-profiles-10-11>.

⁹ Miron, G. & Welner, K.G. (forthcoming, 2012). Introduction. In G. Miron, K.G. Welner, P.H. Hinchey, & W.J. Mathis (Eds.), *Exploring the school choice universe: Evidence and Recommendation*. Charlotte, NC: Information Age Publishing.

¹⁰ Watson, J., Murin, A., Vashaw, L., Gemin, B., & Rapp, C. (2011). *Keeping pace with K-12 online learning: A review of state-level policy and practice*. Evergreen, CO: Evergreen Education Group. Retrieved on May 6, 2012, from <http://kpk12.com/cms/wp-content/uploads/KeepingPace2011.pdf>.

- 11 Queen, B. & Lewis, L. (2011). *Distance Education Courses for Public Elementary and Secondary School Students: 2009–10* (NCES 2012-008). U.S. Department of Education, National Center for Education Statistics. Washington, DC: Government Printing Office.
- 12 Finn, C.E. & Fairchild, D.R. (2012). *Education reform for the digital era*. Washington DC: The Thomas B. Fordham Institute.
- 13 Battaglini, T.B., Haldeman, M., & Laurans, E. (2012). *The Costs of Online Learning*. Washington DC: Thomas B. Fordham Institute. Retrieved March 20, 2012, from <http://www.edexcellence.net/publications/the-costs-of-online-learning.html>.
- 14 Hassel, B. C. & Hassel, E. A. (2011). *Teachers in the age of digital instruction. Creating sound policy for digital learning*, A working paper series from the Thomas B. Fordham Institute. Washington, DC: Thomas B. Fordham Institute. Retrieved April 10, 2012, from <http://www.edexcellence.net/publications/teachers-in-the-age-of-digital-instruction.html>.
- 15 Huerta, L. A. (2012). *Review of “Teachers in the age of digital instruction: Creating sound policy for digital learning.”* Boulder, CO: National Education Policy Center. Retrieved April 10, 2012, from <http://nepc.colorado.edu/thinktank/review-teachers-digital-age>.
- 16 Chubb, J. E. & Moe, T. (1990). *Politics, markets and America’s schools*. Washington, DC: Brookings Institution.
- Hill, P., Pierce, L. C., & Guthrie, J. W. (1997). *Reinventing public education: How contracting can transform America’s schools* Chicago: University of Chicago Press.
- Hoxby, C. M. (2000). Does competition among public schools benefit students and taxpayers? Evidence from natural variation in school districting. *American Economic Review*, 90(5), 1209-1239.
- 17 Glass, G. V & Welner, K. G. (2011). *Online K-12 Schooling in the U.S.: Uncertain Private Ventures in Need of Public Regulation*. Boulder, CO: National Education Policy Center. Retrieved May 15, 2012, from <http://nepc.colorado.edu/publication/online-k-12-schooling>.
- 18 Glass, G. V & Welner, K. G. (2011). *Online K-12 Schooling in the U.S.: Uncertain Private Ventures in Need of Public Regulation*. Boulder, CO: National Education Policy Center. Retrieved May 15, 2012, from <http://nepc.colorado.edu/publication/online-k-12-schooling>.
- 19 Means, B., Murphy, T. Bakia, M., & Jones, K. (2010). Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies. Washington, DC: U.S. Department of Education, Office of Planning, Evaluation and Policy Development. Retrieved May 8, 2012, from <http://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf>.
- 20 Zimmer, R., Buddin, R, Chau, D., Gill, B., Guarino, C., Hamilton, L., Krop, C., McCaffrey, D., Sandler, M., & Brewer, D. (2003). *Charter school operation and performance: Evidence from California*. Santa Monica: RAND.
- 21 Miron, G., Nelson, C., & Risley, J. (2002). *Strengthening Pennsylvania's charter school reform: Findings from the statewide evaluation and discussion of relevant policy issues*. Harrisburg, PA: Pennsylvania Department of Education.
- 22 CREDO. (2011). *Charter school performance in Pennsylvania*. Palo Alto, CA: Center for Research on Education Outcomes (CREDO), Stanford University. Retrieved June 14, 2011 from http://credo.stanford.edu/reports/PA%20State%20Report_20110404_FINAL.pdf.

- 23 Hubbard, B. & Mitchell, N. (2011). Online K-12 schools failing students but keeping tax dollars. *I-News Network*. Retrieved May 30, 2012, from <http://www.inewsnetwork.org/special-reports/online-k-12-schools/>.
- 24 Office of the State Auditor. (2006). *Online education: Department of Education Performance audit*. Denver, CO: Author.
- 25 Legislative Audit Bureau. (2010). *An Evaluation: Virtual Charter Schools*. Madison, WI: Author.
- 26 Office of the Legislative Auditor. (2011). *Evaluation report: K-12 Online Learning*. St. Paul, MN: Author.
- 27 Ryman, A. & Kossan, P. (2011). The race to online: Arizona experiments with virtual K-12 schools. Will they work for your child? *Arizona Republic*. Retrieved June 4, 2012, from <http://www.azcentral.com/news/education/online-school/>.
- 28 Each of the annual Profiles of EMOs can be downloaded from the following website. <http://nepc.colorado.edu/topics/732>.
- 29 Thedy, E. G. (2010). *An analysis of the legal, statutory, and governance issues of virtual charter schools*. Doctoral dissertation. Orlando: University of Central Florida, Table 2, 192-194. Retrieved May 20, 2012, from http://etd.fcla.edu/CF/CFE0003244/Thedy_Elizabeth_G_201008_EdD.pdf.
- 30 Barth, P., Hull, J., & St. Andrie, R. (2012). Searching for the reality of virtual schools. Alexandria, VA. Center for Public Education, National School Boards Association. Retrieved May 18, 2012, from <http://www.centerforpubliceducation.org/Main-Menu/Organizing-a-school/Searching-for-the-reality-of-virtual-schools-at-a-glance/Searching-for-the-reality-of-virtual-schools-full-report.pdf>.
- 31 Miron, G. & Urschel, J.L. (2010). *Equal or fair? A study of revenues and expenditure in American charter schools*. Boulder, CO: National Education Policy Center. Retrieved April 20, 2012, from <http://nepc.colorado.edu/publication/charter-school-finance>
- 32 Battaglino, T.B., Haldeman, M. & Laurans, E. (2012). *The Costs of Online Learning*. Washington DC: Thomas B. Fordham Institute. Retrieved March 20, 2012, from <http://www.edexcellence.net/publications/the-costs-of-online-learning.html>.
- 33 A thorough and insightful review of the Fordham Institute study was completed by Jennifer King Rice as part of the Think Tank Review Project at the National Education Policy Center.
- Rice, J.K. (2012). *Review of "The Costs of Online Learning."* Boulder, CO: National Education Policy Center. Retrieved March 20, 2012, from <http://nepc.colorado.edu/thinktank/review-cost-of-online>.
- 34 Anderson, A. H., Augenblick, J., DeCescre, D., & Conrad, N. (2006, October 2). *Costs and Funding of Virtual Schools*. Denver, CO: Augenblick, Palaich, and Associates, Inc. Retrieved June 2, 2012, from <http://www.apaconsulting.net/uploads/reports/9.pdf>.
- 35 Legislative Audit Bureau. (2010). *An Evaluation: Virtual Charter Schools*. Madison, WI: Author.
- 36 Barbour, M. K. (in press). Virtual schools are more cost-effective compared to traditional, brick-and-mortar schools? In K. P. Brady (Ed.), *Technology in Schools: Debating Issues in American Education*. Thousand Oaks, CA: Sage.

37 Miron, G., Urschel, J. L., Mathis, W. J., & Tornquist, E. (2010). *Schools without Diversity: Education Management Organizations, Charter Schools and the Demographic Stratification of the American School System*. Boulder, CO: National Education Policy Center. Retrieved May 17, 2012, from <http://nepc.colorado.edu/publication/schools-without-diversity>.

Howe, K. R., & Welner, K. G. (2002). School choice and the pressure to perform: Déjà vu for children with disabilities? *Remedial and Special Education, 23*(4). 212-222.

38 Fiore, T. A., Harwell, L. M., Blackorby, J., & Finnigan, K.S. (2000). *Charter schools and students with disabilities: A national study* (Final Report). Washington, DC: U.S. Department of Education.

Miron, G., & Nelson, C. (2002). *What's public about charter schools? Lessons learned about choice and accountability*. Thousand Oaks, CA: Corwin Press, Inc.

Miron, G., Nelson, C., & Risley, J. (2002). *Strengthening Pennsylvania's charter school reform: Findings from the statewide evaluation and discussion of relevant policy issues*. Kalamazoo, MI: The Evaluation Center, Western Michigan University.

Estes, M. B. (2009). Charter schools and students with disabilities: How far have we come? *Remedial and Special Education, 30*(4).

39 K12 schools also have 0.3% of its students classified as “Ungraded” which is not depicted in this figure. In the national population, 0.2% of all students do not have a grade specified and are designated as “Ungraded.”

40 Each state has a unique funding formula. Some states fund schools largely based on local taxes, while others have shifted most funding to state tax sources. States that rely on local taxes to fund schools typically have a formula that directs supplemental state revenues to districts with higher levels of poverty and a weaker tax base. In these instances, the funding mechanism requires districts to share a specific portion of local tax revenues with charter schools.

State funding formulas also can vary in the degree to which they fund differentials in teacher salaries, including increments for such characteristics as advanced degrees or years of teaching experience. Further, they vary in financial support for educating students with special needs. While the accounting formulas of some states do allocate for such services, other states' formulas are crude and create inherent incentives not to enroll students with special needs.

The biggest difference among states relates to costs for facilities. Many states allocate separate funding for facilities or capital improvements. Charter schools have access to federal Public Charter School Program funds for start-up during the initial years of operation, although these funds are insufficient to purchase or build a new facility. While some states are generous in financing charter school facilities, others offer little or no such financing. We explore the issue of facilities in comparing expenditures later in this report.

41 For example, in a handful of states, such as Connecticut and Illinois, a large portion of the costs for special education services provided by the charter schools is actually paid by local districts.

42 Most of K12's schools are charter schools, which by design have been considered to be more able to attract or obtain funding from private sources because of their community roots, entrepreneurial spirit, and flexibility to create new partnerships. As we found in our 2010 national study of charter school finance (Miron & Urschel, 2010), charter schools are much less likely than traditional school districts to share or report information on the private revenue that are collected and spent on behalf of charter schools.

43 The data set and information about the dataset can be obtained from the following website:
<http://nces.ed.gov/ccd/stfis.asp>

44 The *Other support services* category is defined by NCES as “expenditure for business support, central support, and other support services.” Business support services include “payments for fiscal services (budgeting, receiving and disbursing funds, payroll, internal auditing, and accounting), purchasing, warehousing, supply distribution, printing, publishing, and duplicating services. Central support services include planning, research, development, and evaluation services. They also include information services, staff services (recruitment, staff accounting, non-instructional in-service training, staff health services), and data processing services” (p. B-9).

45 Miron, G., Urschel, J. L., Mathis, W, J., & Tornquist, E. (2010). *Schools without Diversity: Education Management Organizations, Charter Schools and the Demographic Stratification of the American School System*. Boulder, CO: National Education Policy Center. Retrieved May 17, 2012, from <http://nepc.colorado.edu/publication/schools-without-diversity>.

46 The exception is Pennsylvania Virtual Charter School (PAVCS), which reported spending 64% of benefits on employees involved with instruction.

47 Battaglino, T.B., Haldeman, M. & Laurans, E. (2012). *The Costs of Online Learning*. Washington DC: Thomas B. Fordham Institute. Retrieved March 20, 2012, from <http://www.edexcellence.net/publications/the-costs-of-online-learning.html>.

48 Miron, G., Urschel, J. L., Mathis, W, J., & Tornquist, E. (2010). *Schools without Diversity: Education Management Organizations, Charter Schools and the Demographic Stratification of the American School System*. Boulder, CO: National Education Policy Center. Retrieved May 17, 2012, from <http://nepc.colorado.edu/publication/schools-without-diversity>.

Howe, K. R., & Welner, K. G. (2002). School choice and the pressure to perform: Déjà vu for children with disabilities? *Remedial and Special Education* , 23(4). 212-222.

Fiore, T. A., Harwell, L. M., Blackorby, J., & Finnigan, K.S. (2000). *Charter schools and students with disabilities: A national study* (Final Report). U.S. Department of Education.

Miron, G. & Nelson, C. (2002). *What’s public about charter schools? Lessons learned about choice and accountability*. Thousand Oaks, CA: Corwin Press, Inc.

49 For all types of public schools, the additional costs for students with disabilities—especially students with moderate or severe disabilities—is typically not fully funded, and therefore some of the spending otherwise devoted to regular education is devoted to these students. Because traditional public schools have a higher proportion of students with disabilities, and a higher concentration of students with severe and moderate disabilities, the burden of having to subsidize their education falls more heavily on them. This results in a cost advantage for K12 schools.

50 Miron & Nelson (2002) estimated that high schools had per pupil costs that were \$750, on average, higher than elementary schools. This is due to demands on the high schools to provide vocational lines as well as the fact that the teacher-student ration at high schools is less cost efficient, in part, due to the need for more single subject certified teachers. High schools are also more likely to offer sports and other extracurricular programs. See Miron, G. & Nelson, C. (2002). *What’s public about charter schools? Lessons learned about choice and accountability*. Thousand Oaks, CA: Corwin Press, Inc.

51 Hubbard, B. & Mitchell, N. (2011). Online K-12 schools failing students but keeping tax dollars. *I-News Network*. Retrieved May 30, 2012, from <http://www.inewsnetwork.org/special-reports/online-k-12-schools/>

52 Miron, G., Urschel, J.L., Yat Aguilar, M.A., & Dailey, B. (2012). *Profiles of for-profit and nonprofit education management organizations: Thirteenth annual report - 2010-2011*. Boulder, CO: National Education Policy Center. Retrieved May 17, 2012, from <http://nepc.colorado.edu/publication/EMO-profiles-10-11>.

53 Imagine Schools Inc. operates more schools but enrolls fewer students than K12.

54 K12 Inc. (2012). *K12® virtual academies: Academic performance trends*. Herndon, VA: Author. Retrieved May 24, 2012, from <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9MTMoMDc2fENoaWxkSUQ9LTF8VHlwZToz&t=1>

55 Each of the annual Profiles of EMOs can be downloaded from the following website. <http://nepc.colorado.edu/topics/732>

56 Miron, G., Urschel, J.L., Yat Aguilar, M.A., & Dailey, B. (2012). *Profiles of for-profit and nonprofit education management organizations: Thirteenth annual report - 2010-2011*. Boulder, CO: National Education Policy Center. Retrieved May 17, 2012, from <http://nepc.colorado.edu/publication/EMO-profiles-10-11>.

57 Usher, A. (2011). *AYP Results for 2010-11*. Washington DC: Center for Education Policy. Retrieved December 16, 2011, from http://www.cep-dc.org/cfcontent_file.cfm?Attachment=Usher_Report_AYP2010-2011_121511.pdf.

58 The performance of other EMOs that operate large number of virtual schools, such as Connections Academies, is similar to K12, while the performance of EMOs that operate few virtual schools, such as White Hat Management, is substantially work (only 5% of the full-time virtual schools operated by White Hat met AYP).

59 K12 Inc. (2012). *K12® virtual academies: Academic performance trends*. Herndon, VA: Author. Retrieved May 24, 2012. <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9MTMoMDc2fENoaWxkSUQ9LTF8VHlwZToz&t=1>

60 In the K12 report other measures of performance are shared that are collected and analyzed internally and not by an independent state authority. We reviewed the findings and methods of the alternative performance measures and found them to be helpful in determining the impact K12 has on students that persist in its schools. We also recognize that important methodological details are missing and we regret that the findings do not permit adequate comparisons between K12 schools and other schools.

61 Hubbard, B. & Mitchell, N. (2011). Online K-12 schools failing students but keeping tax dollars. *I-News Network*. Retrieved May 30, 2012, from <http://www.inewsnetwork.org/special-reports/online-k-12-schools/>

62 CREDO. (2011). *Charter school performance in Pennsylvania*. Palo Alto, CA: Center for Research on Education Outcomes (CREDO), Stanford University. Retrieved June 14, 2011 from http://credo.stanford.edu/reports/PA%20State%20Report_20110404_FINAL.pdf.

Hubbard, B. & Mitchell, N. (2011). Online K-12 schools failing students but keeping tax dollars. *I-News Network*. Retrieved May 30, 2012, from <http://www.inewsnetwork.org/special-reports/online-k-12-schools/>.

Office of the State Auditor. (2006). *Online education: Department of Education Performance audit*. Denver, CO: Author.

Legislative Audit Bureau. (2010). *An Evaluation: Virtual Charter Schools*. Madison, WI: Author.

Office of the Legislative Auditor. (2011). *Evaluation report: K-12 Online Learning*. St. Paul, MN: Author.

63 Hubbard, B. & Mitchell, N. (2011). Online K-12 schools failing students but keeping tax dollars. *I-News Network*. Retrieved May 30, 2012, from <http://www.inewsnetwork.org/special-reports/online-k-12-schools/>.

Office of the State Auditor. (2006). *Online education: Department of Education Performance audit*. Denver, CO: Author.

Legislative Audit Bureau. (2010). *An Evaluation: Virtual Charter Schools*. Madison, WI: Author.

Office of the Legislative Auditor. (2011). *Evaluation report: K-12 Online Learning*. St. Paul, MN: Author.

64 K12 Inc. (2012). K12® virtual academies: Academic performance trends. Herndon, VA: Author. Retrieved May 24, 2012. <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9MTMoMDc2fENoaWxkSUQ9LTF8VHlwZToz&t=1>

65 This is based on statements in K12's third quarter earnings conference call for investors (page 3).

K12 Inc. (2012, May 8). *Q3 2012 K12 Inc. Earnings Conference Call – Final*

66 Although the K12 curriculum was not examined in this study, there are available a couple older papers that explore and discuss K12's curriculum, see Bracey (2004) and Ohanian (2004):

Bracey, G. (2004). *Knowledge Universe and virtual schools: Educational breakthrough or digital raid on the public treasury?* Retrieved June 3, 2012, <http://nepc.colorado.edu/files/EPSSL-0404-118-EPRU.pdf>.

Ohanian, S. (2004). *The K12 virtual primary school history curriculum: A participant's-eye view*. Tempe, AZ: Education Policy Studies Laboratory, Arizona State University. Retrieved June 3, 2012, from <http://nepc.colorado.edu/files/EPSSL-0404-118-EPRU.pdf>.

67 The teacher data reported by K12 suggests reasonable teacher–student ratios at some of its schools, although a weighted average indicates that K12 has just over 60 students per teachers.

68 K12 Inc. (2012). K12® virtual academies: Academic performance trends. Herndon, VA: Author. Retrieved May 24, 2012. <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9MTMoMDc2fENoaWxkSUQ9LTF8VHlwZToz&t=1>

69 Charter schools and traditional public schools are funded according to state funding formulas. The main reason explaining why charter schools receive less per pupil is categorical funding for programs that are not required by charter schools and for extra costs associated with children with special needs. A recent study by Bruce Baker, Ken Libby, and Kathryn Wiley found that special education population concentrations were the strongest predictor of spending variation across schools.

Baker, B.D., Libby, K., & Wiley, K. (2012). *Spending by the Major Charter Management Organizations: Comparing charter school and local public district financial resources in New York, Ohio, and Texas*. Boulder, CO: National Education Policy Center. Retrieved May 25, 2012, from <http://nepc.colorado.edu/publication/spending-major-charter>.

70 CREDO. (2011). *Charter school performance in Pennsylvania*. Palo Alto, CA: Center for Research on Education Outcomes (CREDO), Stanford University. Retrieved June 14, 2011 from http://credo.stanford.edu/reports/PA%20State%20Report_20110404_FINAL.pdf.

Hubbard, B. & Mitchell, N. (2011). Online K-12 schools failing students but keeping tax dollars. *I-News Network*. Retrieved May 30, 2012, from <http://www.inewsnetwork.org/special-reports/online-k-12-schools/>.

Office of the State Auditor. (2006). *Online education: Department of Education Performance audit*. Denver, CO: Author.

Legislative Audit Bureau. (2010). *An Evaluation: Virtual Charter Schools*. Madison, WI: Author.

Office of the Legislative Auditor. (2011). *Evaluation report: K-12 Online Learning*. St. Paul, MN: Author.

71 Huerta, L. A., González, M. F., & d'Entremont, C. (2006). Cyber and home school charter schools: Adopting policy to new forms of public schooling. *Peabody Journal of Education*, 81(1), 103-139.

Barbour, M.K., Reeves, T.C. (2009). The reality of virtual schools: A review of the literature. *Computers & Education*, 52(2), 402-416.

Glass, G. V & Welner, K. G. (2011). *Online K-12 Schooling in the U.S.: Uncertain Private Ventures in Need of Public Regulation*. Boulder, CO: National Education Policy Center. Retrieved May 15, 2012, from <http://nepc.colorado.edu/publication/online-k-12-schooling>.

72 Note that Justin Bathon has already drafted model legislation that can be used or adopted by policymakers:

Bathon, J. (2011). *Model Legislation Related to Online Learning Opportunities for Students in Public Elementary and Secondary Education Schools*. Boulder, CO: National Education Policy Center. Retrieved May 25, 2012, from <http://nepc.colorado.edu/publication/online-k-12-schooling>.

73 The performance outcomes we have reviewed are for full-time virtual schools operated by K12 Inc. We believe that other full-time virtual schools face similar performance problems as K12. Our study has not considered delivery of individual online courses, nor has it considered hybrid options in which only part of the instruction is delivered virtually.

74 K12 Inc. (2012). K12® virtual academies: Academic performance trends. Herndon, VA: Author. Retrieved May 24, 2012. <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9MTM0MDc2fENoaWxkSUQ9LTF8VHlwZToz&t=1>

75 Given many states' funding approaches, involving fall student counts, this market signal is dulled by K12's successful efforts to replace students anew each fall.

76 Miron, G. & Urschel, J.L. (2010). *Equal or fair? A study of revenues and expenditure in American charter schools*. Boulder, CO: National Education Policy Center Retrieved April 20, 2012, from <http://nepc.colorado.edu/publication/charter-school-finance>.

77 Barth, P., Hull, J., & St. Andrie, R. (2012). Searching for the reality of virtual schools. Alexandria, VA. Center for Public Education, National School Boards Association. Retrieved May 18, 2012, from <http://www.centerforpubliceducation.org/Main-Menu/Organizing-a-school/Searching-for-the-reality-of-virtual-schools-at-a-glance/Searching-for-the-reality-of-virtual-schools-full-report.pdf>.

78 Anderson, A.B., Augenblick, J., DeCescre, D., & Conrad, J. (2006). *Costs and funding of virtual schools: An examination of the costs to start, operate, and grow virtual schools and a discussion of funding options for states interested in supporting virtual school programs*. Atlanta, GA: BellSouth Foundation.

79 Huerta, L. A., González, M. F., & d'Entremont, C. (2006). Cyber and home school charter schools: Adopting policy to new forms of public schooling. *Peabody Journal of Education*, 81(1), 103-139.

80 Glass and Welner (2011) recommended that state legislatures address the authentication of the source of students' work, revise and improve fiscal and instructional regulations, require audits of private providers, and create and maintain a list of legitimate agencies that accredit providers of K-12 online education.

81 The research evidence we reviewed indicated that sending districts can experience negative financial effects when resident pupils attend virtual charter schools in other districts, because the loss of enrollment is not sufficient to reduce their fixed costs to operate traditional schools.

82 Barth, P., Hull, J., & St. Andrie, R. (2012). *Searching for the reality of virtual schools*. Alexandria, VA. Center for Public Education, National School Boards Association. Retrieved May 18, 2012, from <http://www.centerforpubliceducation.org/Main-Menu/Organizing-a-school/Searching-for-the-reality-of-virtual-schools-at-a-glance/Searching-for-the-reality-of-virtual-schools-full-report>.

83 Baker, B. D. & Welner, K. G. (2012). Evidence and Rigor: Scrutinizing the Rhetorical Embrace of Evidence-based Decision-making. *Educational Researcher*, 41(3), 98-101.