Analysis of Online Charter School Study by CREDO/Mathematica/CRPE

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Weaknesses of the academic performance analysis and survey analysis: The *Virtual Twin* matching methodology used in the report presumes that all factors that impact student performance have been identified and students are matched based on these factors. However, the virtual twin model does not include several important factors that disproportionally affect students in online charter schools. A match for these factors is necessary to ensure similar students are being accurately compared.

1) The virtual twin model used in the study does not control for persistence – the length of enrollment for students in virtual charter schools and how that impacts performance.
2) The virtual twin model does not take into account the enrollment date of students who transferred to virtual charter schools and how that impacts performance. Studies show that more than half of all online school students enroll after the start of school year.
3) The study does not control for nor take into account the effects of mobility. Online charter schools experience a higher rate of mobility than traditional schools.
4) The study does not take into account the factors for which parents choose to enroll their children into online charter schools. Students who transfer to online schools have circumstances that differ, often significantly, from their "virtual twin" who stayed in their traditional school.
5) The "virtual twin" matching assumes that test score distribution is similar for virtual charter schools and traditional schools';, however, online charter school students do not fall within the normal distribution.

Persistence – The study does not take into account the length of enrollment for students in online charter schools. Most of the data is from students who were enrolled in an online charter school less than two years, which the report states is much less than the average length of enrollment at traditional schools. The analysis of students who went from a traditional school to an online charter school and then returned to a traditional school includes only one year of online charter school enrollment.

Multi-year data shows that in nearly all grade levels and in both math and reading, the percentage of students scoring at or above proficiency on state assessments increases with each year of enrollment in an online school.

- **In online schools using K12, students enrolled three or more years in grades 3-8 achieve higher proficiency in math (14 percentage points) and reading (19 percentage points) compared to students enrolled less than one year.**
- **School-level data shows that several K12-managed schools recently improved performance and outcomes, and perform well compared to demographically similar school districts.**
- **The CREDO report reviewed data before 2012. Since then, K12 has published three comprehensive Annual Academic Reports, along with school-by-school outcomes and a series of white papers highlighting academic results of individual schools and K12's instructional programs. (See K12's 2015 Annual Academic Report and K12's series of academic white papers at www.K12.com.)**

Enrollment date – The study does not take into account the enrollment date of online charter school students. Students were included in the study regardless of when they enrolled. Students who enrolled in an online charter school one week before state testing may have been matched to students who were continuously enrolled for multiple years in a traditional school. Additionally, students who change schools during the middle of a school year typically have had a negative experience that precipitates the change. A Keeping Pace report, Accountability in the Digital Age (Feb 2015), found that out of 180,000 online enrollments, 52 percent enrolled after the start of the school year and 33 percent enrolled more than four weeks after the start of the school year.

- **K12 has analyzed proficiency of students who enrolled after the start of the school year. There is a statistically significant mean difference in average normalized reading and math scores for students who enroll at the beginning of the school year versus after the start of the school year. K12 used a similar normalizing method as CREDO when conducting this analysis.**

Mobility – The study does not control for nor take into account the effects of mobility (moving from one school setting to another). Online charter schools experience a higher rate of mobility than traditional public schools as noted in the report. This higher rate of mobility has been confirmed in several state studies (MN, CO, etc.), which found that online schools experience a mobility rate twice that of traditional public schools.

There is a large body of research that addresses the effects of mobility. For instance, a report from the U.S. Government Accountability Office (GAO) finds that "schools face a range of challenges in meeting the academic, social, and emotional needs of students who change schools." Although some of these challenges are due to the circumstances that lead to high mobility rates, such as students living in poverty, other challenges are specific to the act of changing schools. According to the GAO report, "Students who change schools often face challenges due to differences in what is taught and how it is taught. Students may arrive without records or with incomplete records, making it difficult for teachers to make placement decisions and identify special education needs." Similarly, a meta-analysis found that "mobility was consistently associated with lower achievement and higher rates of high school dropout." The GAO characterizes high mobility schools as those in which more than 10 percent of the student population leaves before the end of the school year. Many online charter schools experience mobility rates of 30 percent or more during the school year.

- **K12 is implementing several initiatives in its partner schools across the country to address the challenges of high mobility. For example, K12 has developed an onboarding program to help students engage in schooling and make a successful transition to the online learning model.**

- **As a company, K12 has invested millions of dollars in a focused initiative that provides schools with additional resources to foster engagement and success by delivering continuing support services to students and families throughout the school year. This initiative is based on a successful pilot program at Georgia Cyber Academy, which demonstrated that students receiving these services demonstrated significantly greater gains in scaled scores on state assessments than similar students who did not receive these services.**

Reasons for Enrolling – The study does not describe reasons why students and parents choose to enroll in online charter schools. Online charter schools are often schools of last resort for many students across the country. Given the high percentage of students who enroll mid-semester, there is usually a precipitating event that causes a student to transfer to an online school. Additionally, for tens of thousands of students, there are simply no alternative public education options other than online schools because of geographic barriers or a lack of school choice alternatives. For many families, online charter schools are the *only* public school option they have.

While these factors are supported by findings in the study, the researchers did not control for their effects. These factors are unique to online schools and demonstrate that these public schools are, indeed, *not* like traditional schools.

The study concludes that online charter school students are at risk as measured by:

- Lower than average prior state test scores

- Lower than average income
- Higher than average mobility rates

These at-risk factors should cause researchers to evaluate *why* parents are choosing a specific option and which students are succeeding in the online school model. Additionally, the report concludes that 30-40 percent of students in online charter schools actually *exceeded* academic growth estimates, which is evidence that online charter schools are a successful option for tens of thousands of students.

- **Nearly one-half of parents in K12-managed online schools say they selected the school because their child was struggling or needed to get caught up. Approximately 20 percent of parents enroll in an online school for a "temporary alternative."**

- **Online schools are a good option for students, but they are not the right fit for all students. K12 trusts parents, because they know their children best. Our promise is to work with our school partners to provide parents all the information, tools, and resources they need to make an informed decision for their children.**

- **K12 implemented a change in its school outreach efforts for the 2015-16 school year to help parents make even better and more informed choices about online schools, and to improve the likelihood that students who choose online schools will succeed and stay enrolled. Enrollment trends in K12-managed schools over the last two years demonstrate an increased focus on measured growth.**

Normal Distribution -- The "virtual twin" matching assumes that test score distribution is similar for online charter schools and traditional schools; however, online charter school students do not fall within the normal distribution. "Normal distribution" assumes that the mean, median, and mode are the same (the most frequently occurring point in the distribution). If the median, mean, and mode do not match, then there is "skew" in the distribution and adjustments must be made before statistics can be calculated for the distribution.

The researchers could have made the matching process more appropriate by using median instead of mean scores as comparison points. Specifically, if the online charter schools enroll mostly low-achieving students and traditional schools enroll students who fall within a more normal distribution, using the "mean" for matching purposes will not produce the correctly matched "virtual twins." Matching is supposed to make the distributions equivalent by accounting for all variables that could possibly change the distribution, thus allowing researchers to examine treatment effect. In the report, using the mean rather than the median creates distortion, since online charter schools do not fall within the normal distribution. (Consider this analogy: A small town has no millionaires and a median income of $38,000. If a few millionaires move to the town, the mean might increase to $150,000, but the median would remain somewhere around $38,000.)

Instructional Time – The study estimates that online charter school teachers teach as much in one week as a traditional public school teacher teaches in one day. That is not the case in K12-managed online schools. Synchronous instruction time varies by school and by student, but overall the amount of synchronous instruction has increased over the past two years (the study did not look at data or trends after 2012-13). **Teachers in K12-managed online schools are providing far more direct instruction than the study estimates – an average of 15-20 hours a week, and, in some cases, more.**

- **K12 launched a teacher support initiative that includes training, tools, and coaching to ensure teachers are equipped with effective technologies and have time to provide meaningful instruction. Schools have been assigned dozens of instructional coaches to provide support and feedback every two weeks using a rubric developed in cooperation with the National Institute for Excellence in Teaching (NIET). This intensive support and the frequency of the feedback cycle exceed all professional standards and practices we are aware of.**

Staffing – The study concludes that online charter school staffing is lean compared to traditional public schools. The report does not take into account the many staff members, both instructional and non-instructional, who work to meet the wide range of academic needs of online charter school students but do not have responsibility for a specific class or grade. For

instance, intervention specialists, counselors, and family support specialists are not included in the staffing analysis. These professionals each contribute to and support student learning at K12 schools but are not included in the report's statistics.

The study affirms key facts about online schools on student demographics, funding, evaluation and assessment:

1) Online charter schools serve a higher percentage of low-income students than traditional schools.
2) Online charter schools serve a higher percentage of students who enter below proficiency.
3) States should move away from single count dates to determine school funding to ensure all public schools are only funded for students during the time they are enrolled in specific schools.
4) Online charter schools frequently conduct student assessments to measure individual growth.
5) Online charter schools are effectively using student growth measures to evaluate teachers.

Poverty – The study concludes that 48 percent of virtual charter school students are eligible for free or reduced-price lunch compared to 39 percent in traditional schools. In the 2013-2014 school year, however, 62 percent of students in K12 schools were eligible for free or reduced-price lunch (exceeding the eligibility at traditional schools by 29 percentage points).

Prior proficiency levels – The study shows that online charter schools students had lower than average proficiency levels PRIOR to enrolling in the online charter schools. Among students enrolling in online charter schools, there are one-third fewer students in the top decile compared to traditional schools, and 40 percent more in the bottom decile. In short, online charter schools significantly differ from traditional schools because, relative to the total population of students served, online schools serve a higher percentage of students who face both academic and economic challenges.

Funding models – The study recommends funding models other than count dates. K12 has consistently recommended a funding model that only permits schools to collect state funding for the specific time a student is enrolled in a school. Count date funding models are typically supported by traditional school districts. The study suggests a performance-based funding model for online charter schools. If performance-based funding is appropriate for one type of public school, it should be implemented in all public schools. Online schools receive significantly less in total funding compared to traditional schools, and are typically the lowest funded public schools in a state.

Classroom-level assessments - The study recognizes that two-thirds of the online charter schools assess students frequently, with a large percentage of virtual charter schools assessing students on a weekly basis.

- **Frequent student assessments are built into the K12 instructional model. K12 provides multiple assessments, including lesson and unit assessments, assessments in teacher-led sessions, formative assessments, and semester assessments.**

Teacher evaluations - The study says teacher evaluations in online charter schools focus on student growth, observations, and teacher accessibility to students. The authors reports that online charters are ahead of traditional public schools with respect to integration of student growth measurements into evaluations.

- **K12 worked with the National Institute for Excellence in Teaching to develop an innovative researched-based rubric that serves as the basis for evaluation, coaching, and teacher development in virtual learning environments, including the network of K12 schools. K12 also works to link student growth to teachers in states that provide this data.**