2014

Can Virtual Schools Thrive in the Real World?

Yinying Wang
Georgia State University, ywang103@gsu.edu

Janet R. Decker
Indiana University - Bloomington, jrumple@indiana.edu

Can Virtual Schools Thrive in the Real World?

Yinying Wang

University of Cincinnati

Janet R. Decker

Indiana University

Yinying Wang studies educational technology leadership at the University of Cincinnati. Her research focuses on educational technology leadership, social network analysis, and organizational communication. Address correspondence to Yinying Wang, Educational Leadership Program, University of Cincinnati, Cincinnati, OH 45221-0049. E-mail: wang2yy@uc.edu

Dr. Janet Decker teaches education law courses at Indiana University. Her research focuses on legal and policy issues related to special education, charter schools, and technology. Dr. Decker received both her Ph.D. in Education Policy Studies and J.D. from Indiana University. She also worked at Indiana University's Maurer School of Law and Center for Evaluation and Education Policy.

Abstract

Despite the relatively large number of students enrolled in Ohio's virtual schools, it is unclear how virtual schools compare to their traditional school counterparts on measures of student achievement. To provide some insight, we compared the school performance from 2007-2011 at Ohio's virtual and traditional schools. The results suggest that Ohio's virtual schools have grown rapidly, but have also experienced much lower levels of school performance than traditional schools. In light of these findings, we discuss factors that may be contributing to the large number of low-performing virtual schools in Ohio. Considering the lack of sufficient evidence that Ohio's virtual schools are effective, we conclude that the relentless pursuit to expand virtual schools is problematic.

Keywords: virtual schools, school performance, student achievement

Can Virtual Schools Thrive in the Real World?

The landscape of education has been reshaped with the exponential growth of virtual schools across the United States (National Forum on Education Statistics, 2006). Depending on online course delivery, virtual schools can either be full-time or supplementary (Barbour & Reeves, 2009; Bathon, 2011). In 2011-12, an estimated 275,000 students enrolled in full-time virtual schools in 31 states; during this time, approximately two million K-12 students received their education in supplementary virtual schools and blended virtual learning programs (Aud, Wilkinson-Flicker, Kristapovich, Rathbun, Wang & Zhang, 2013; Watson, Murin, Vashaw, Gemin**,** & Rapp, 2012).

In the past decade, virtual schools have attracted increased scrutiny as for-profit online education service providers continue to aggressively sponsor the rapid growth of virtual schools. At the same time, there is insufficient evidence to conclude that virtual schools are delivering quality education to their students (Glass & Welner, 2011). Granted, the emergence of virtual schools has revolutionized education by providing readily accessible learning opportunities (Barbour & Reeves, 2009) and personalized learning tools (Rhim & Kowal, 2008) for all students. Critics vigorously argue, however, that many virtual schools turn out to be a waste of taxpayers' money because online education service providers tend to prioritize profits over success in student learning (Miron et al., 2013).

In response to the criticism, many have called for independent, empirical research on virtual schools' student achievement (Miron et al., 2013). Thus, the purpose of this study is to examine whether differences exist in the school performance outcomes between virtual and traditional schools in Ohio. In order to avoid variability issues that arise when conducting multi-state studies, we intentionally limited our study to the state of Ohio.

Literature Review

The research on virtual schools has been complicated by differing definitions of what constitutes as a "virtual school." In the United States, the term of "virtual schools" encapsulates full-time and supplementary virtual schools, as well as virtual schools administered by an array of entities—including state-level, college and universities, consortium, and for-profit providers (Barbour, 2013; Barbour & Reeves, 2009; Bathon, 2011). In the present study, we apply the definition of "virtual schools" that appears in Ohio's state law. In Ohio, virtual schools, which are also called "online community schools" or "E-schools," must be established according to state law (Ohio Revised Code § 3314). Some of Ohio's virtual schools function independently as their own district and others remain part of public school districts in the state. One unique feature of virtual education in Ohio is that all of its 27 virtual schools are charter schools and therefore, each of Ohio's virtual schools is publically funded. Thus, when we refer to Ohio's "virtual schools," we are applying Ohio's statutory definition of virtual schools which are actually virtual charter schools. In 2011-12, over 30,000 student enrolled in Ohio's virtual schools, cementing its place as one of the top three states (Arizona, Ohio, and Pennsylvania) in terms of virtual school student enrollment in 2011-12 (Watson et al., 2012).

In light of Ohio's large virtual school enrollment and considering that all of Ohio's virtual schools receive state funding, it is imperative to ask how well Ohio's virtual schools are performing. Prior studies have provided mixed results. After comparing the value-added measures between five statewide virtual schools and the so-called "Big Eight" urban school districts (Cleveland, Toledo, Akron, Canton, Dayton, Cincinnati, Columbus, and Youngstown), a report released by Ohio Alliance for Public Charter Schools (OAPCS, 2009) claimed the superiority of Ohio's virtual school performance outcomes. Conversely, O'Donnell and Bloom

(2012) reported that Ohio's traditional schools outperformed virtual schools in terms of value-added measures, graduation rates, and college attendance rates. This divergence in school performance measures has been reported outside of Ohio as well. Nationally, in contrast to the 52% of public schools that met Adequately Yearly Progress (AYP) in 2010, the percentage of virtual schools operated by K12 Inc., a for-profit education management organization, was drastically lower at only 27.7% meeting AYP (Miron & Urschel, 2012).

In addition to the mixed results in the literature on virtual school performance, the rapidly evolving landscape of virtual schools leads to variation in performance data from year to year (Miron et al., 2013). Therefore, we zeroed in on Ohio—one of the states with a relatively large number of virtual school enrollment—and examined its virtual school performance outcomes over the past five years.

Method

The overall aim of our study was to identify how Ohio's virtual schools fare on student performance measures in comparison to Ohio's traditional schools. Another objective of our study was to compare the rate of growth of Ohio's virtual schools to that of traditional schools. To achieve these goals, we asked the following research questions:

1. From 2007 to 2011, how does the growth of Ohio's virtual schools compare to the growth of traditional schools?
2. From 2007 to 2011, how do the Performance Index (PI) scores of Ohio's virtual schools compare to the PI scores of traditional schools?
3. From 2007-2011, how do the school rankings of Ohio's virtual schools compare to rankings of traditional schools?

As illustrated in the research questions, we used PI scores and school rankings as proxies to measure school performance. We did not use value-added data or AYP because these measures for many Ohio's virtual schools were not available on school report cards. In Ohio, a school's PI score is a weighted indicator of student performance on the proficiency and achievement tests, with scores ranging from 0 to 120 (Performance Index, 2013). School rankings are a categorical indicator of school performance in Ohio. The Ohio Department of Education (ODE) assigns each school a ranking, also known as a "designation," by analyzing the following: 1) a school's PI score; 2) whether the school has met AYP; 3) how many indicators were met; and 4) the school's value-added data (Ohio Report Cards, 2013). The six possible school rankings in Ohio, in order from best to worst, are: Excellent with Distinction, Excellent, Effective, Continuous Improvement, Academic Watch, and Academic Emergency.

All the data needed to conduct our analysis were located on the website of the ODE (http://ilrc.ode.state.oh.us/Downloads.asp). Specifically, we gathered the total student enrollment figures, the PI scores, and the school rankings for every virtual and traditional school in Ohio from 2007 to 2011.

For further analysis, we categorized all retrieved data into two groups, virtual and traditional schools. To identify the growth rate of student enrollment at virtual schools, we first compared virtual schools' student enrollment in each year from 2007 to 2011, and then compared the trend in virtual schools with student enrollment in traditional schools in each year from 2007-2011. Next, to reveal the differences in student outcomes between virtual and traditional schools, we calculated the mean PI scores of virtual and traditional schools, respectively. Finally, we computed the total percentage of each school ranking category assigned to virtual schools and then compared the percentages to those at traditional schools for each year.

Findings

The results suggest that student enrollment increased rapidly at virtual schools over a five-year timespan despite traditional schools consistently outperforming virtual schools on school performance measures.

Growth of Enrollment at Ohio's Virtual Schools

As illustrated in Figure 1, we found that Ohio's virtual schools have grown at a faster rate than the state's traditional schools. From 2007-2011, Ohio's virtual schools experienced an average annual growth rate of 11%. Overall, Ohio's virtual school annual student enrollment grew substantially by 57.1% from 22,472 in 2007 to 35,300 in 2011. On the contrary, the number of students enrolled in Ohio's traditional schools declined over the same period of time. In 2011, approximately 1.67 million students were enrolled in Ohio's traditional schools, 2.7% fewer students than the approximately 1.72 million students that were enrolled five years prior.

[Insert Figure 1 here]

Lower Student Performance at Virtual Schools

During this same time period of increased student enrollment, virtual schools experienced lower student performance than their traditional counterparts. In terms of PI scores, we did not find a major improvement in Ohio's virtual schools' annual mean PI scores from 2007-2011. Specifically, virtual schools' mean PI scores, as seen in Figure 2, fluctuated within a narrow range from 76.4 to 78.0 across the five-year span.

On the other hand, Ohio's traditional schools received average annual PI scores, ranging from 90.3 to 94.5, which were considerably higher than those found at the virtual schools. Additionally, Figure 2 demonstrates that unlike the small 1.6 increase in the average annual PI scores of virtual schools, Ohio's traditional schools experienced a larger 4.2 increase in average

annual PI scores. Therefore, not only were the overall PI scores higher at traditional scores, but also the extent of improvement was greater.

[Insert Figure 2 here]

Moreover, our results did not suggest an improvement in virtual schools' rankings from 2007 to 2011. The percentages of each ranking category for Ohio's virtual schools were displayed in Table 1. No virtual school in Ohio achieved the top ranking "Excellence with Distinction" over the five-year span. Only one virtual school (i.e., Ohio Connections Academy) was rated as "Excellent" in 2009, but its rating dropped to "Effective" in the following two school years. No more than 8.0% of virtual schools were categorized as "Effective" schools. On the bottom end of the school ranking spectrum, approximately one-third of Ohio's virtual schools were classified as "Academic Watch" or "Academic Emergency" from 2007 to 2011. The overall poor ratings did not seem to improve over the five-year period either. In 2010, the percentage of virtual schools rated as "Academic Watch" or "Academic Emergency" reached the highest percentage at 44.4%.

In stark contrast, the overall school rankings of Ohio's traditional schools suggest a steady gain in student achievement. Figure 3 indicates that a majority of traditional schools were rated as "Effective" or above (i.e., Excellent, and Excellence with Distinction). Further, unlike the rankings of virtual schools, the rankings of traditional schools appear to be improving over time. For example, the percentage of traditional schools rated as "Excellence with Distinction" rose from 4.2% in 2007 to 13.2% in 2011.

[Insert Table 1 here]

[Insert Figure 3 her]

Discussion and Implications

The results of this study suggest that Ohio's virtual schools have grown rapidly, but they have, in general, experienced lower student performance than traditional schools. In fact, Ohio's virtual school performance outcomes were mediocre at best and disturbing at worst. In this section, we explore two factors that potentially contribute to the staggering percentage of low-performing virtual schools in Ohio. First, Ohio's virtual schools may be enrolling a higher proportion of marginalized students who traditionally score less favorably on student performance measures. Second, virtual school proponents may be focused on priorities that compete with student achievement. We also raise a concern about Ohio's relentless pursuit to expand its virtual school offerings without sufficient evidence that these schools are effective.

Virtual Schools Enroll Higher Proportion of Marginalized Students

While prior literature argued, in general, no marked difference was found in student demographics between virtual schools and traditional schools (Carnahan & Fulton, 2013; Hubbard & Mitchell, 2011; Ryman & Kossan, 2011), the research on Ohio's virtual schools depicted a different picture. Ohio's virtual schools, according to Wang and Decker (forthcoming), are seen as an alternative to traditional schooling, signifying that they attract marginalized students and this may partially explain why they experience poorer student performance. The Electronic Classroom of Tomorrow (ECOT), Ohio's largest virtual school, advertises that it serves "students who don't fit into the traditional classroom setting" (ECOT, n.d.). Oftentimes, the marginalized students attracted to virtual schools are students who are academically behind or failing. For example, Ohio's Findlay Digital Academy advertises that it serves "students who need additional credits for graduation, students with discipline or social

issues in the traditional classroom" and "students who want to re-enter the diploma pathway" (Findlay Digital Academy, n.d.).

Additionally, Wang and Decker (forthcoming) found economically-disadvantaged students and students with disabilities to be over-represented in the demographics of Ohio's virtual schools. Interestingly, Ohio's state law appears to foster the disproportionate representation of these two student groups at virtual schools. Under Ohio law, virtual schools must provide students with a computer (O.R.C. §3314.22(A)(1)) and some virtual schools have gone a step further by supplying their students with internet connections and printers (Wang & Decker, forthcoming). Therefore, economically disadvantaged students have a financial incentive to enroll in Ohio's virtual schools. Similarly, Ohio law mandates that virtual schools submit "a plan for providing special education and related services to disabled students enrolled in the school" (O.R.C. §3314.28(A)). Unsurprisingly, many Ohio virtual schools advertise that they serve students with disabilities (Wang & Decker, forthcoming). Based on the structural incentives and targeted advertising, it makes sense that economically disadvantaged and special education students would enroll in Ohio's virtual schools in large numbers.

Since these two marginalized student groups typically fare worse on student achievement measures, their attendance at virtual schools could negatively impact the overall student performance at these schools. It is plausible the noticeable difference in PI scores may stem from the shift of over-representation of economically-disadvantaged and special need students from traditional schools to virtual schools. Without conducting additional research, however, it is unwise to draw such conclusions. For instance, it is also possible that the students themselves are not influencing the lower performance of virtual schools. Indeed, all students, not just those belonging to marginalized groups, are performing worse at virtual schools. In other words, the

lower student performance may be due to the online delivery format and may not necessarily be tied to the type of students who attend. Carnahan and Fulton (2013) found that special education students at Pennsylvania's virtual schools scored 6% lower on proficiency measures than the state average. Specifically, in 2008, special education students' proficiency rate was 39.9% at the state level and 33.9% within virtual schools. In sum, the over-representation of marginalized students could negatively affect virtual school performance; nevertheless, the schools' demographics may have nothing to do with the subpar performance at virtual schools.

Other Virtual School Priorities Compete with Student Achievement

It is also possible that the unimpressive virtual school performance is the result of an unintentional lack of focus on student achievement. Virtual school proponents include a diverse group, such as "business leaders, school reform organizations, foundations, and for-profit and non-profit service providers" (Miron et al., 2013, p. 1). Therefore, advocates are likely to focus on their own institutional priorities and less attentive to the goal of collective student achievement across the vast number of virtual schools in existence. For example, Ohio's virtual schools receive funds based on student attendance. If for-profit online learning service providers aggressively recruit more students into virtual schools, then taxpayers' money will be funneled into virtual schools regardless of student achievement or school effectiveness (Carr-Chellman & Marsh, 2009). Under this circumstance, for-profit online learning service providers may be prioritizing recruitment efforts above student achievement efforts. In other words, it is more profitable for online learning service providers to utilize their resources to persuade traditional school students to transfer to virtual schools, than for virtual schools to improve student performance once students are enrolled. In Ohio, many virtual schools appear focused on their marketing to increase student enrollment. Some explicitly articulate why specific student

populations such as at-risk students should attend their schools (Wang & Decker, forthcoming). Further, an overwhelming majority of Ohio's virtual schools are open to statewide K-12 students, which makes it easier for students to leave their neighborhood school district.

Instead of remaining focused on their personal priorities, advocates of virtual education ought to address the criticisms regarding subpar student achievement in virtual schools. Proponents of virtual schools should take advantage of this time to strengthen the capacity of enhancing student learning in virtual schools. In addition, as virtual schools are publicly funded, they must be held more accountable for student achievement. Before making another impetuous move to expand virtual schooling, now is the time to pause, scrutinize, and reflect on current practices. This pause is of particular relevance to Ohio where, despite findings of low student performance, a handful of new virtual schools may open in fall 2013 (Ohio Department of Education, 2012).

Conclusion

Our study provides evidence of increasing enrollment at Ohio's virtual schools despite their consistent, subpar school performance. Given the limited scope of this study on one state's virtual charter schools, the commonalities across virtual schools warrant further investigation into student performance at virtual schools in other states. Moreover, we also suggest future researcher look into whether, and how much, the inherent advantages of virtual schools—such as flexible schedule and freeing from geographical constraints—could yield to enhanced virtual school performance outcomes. Technological advances have allowed virtual schools to emerge as an alternative to traditional schooling. However, if the problem of dismal performance persists, the lofty ideal of leveraging technology to revolutionize education through virtual

schools will, unfortunately, fail. The only way for virtual schools to gain a strong foothold as a legitimate alternative to traditional schooling is to improve student performance outcomes.

References

Aud, S., Wilkinson-Flicker, S., Kristapovich, P., Rathbun, A., Wang, X., and Zhang, J. (2013). *The Condition of Education 2013* (NCES 2013-037). U.S. Department of Education, National Center for Education Statistics. Washington, DC. Retrieved from http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2013037

Barbour, M. K. (2013). The landscape of K-12 online learning: Examining what is known. In M. G. Moore (Ed.), *Handbook of distance education* (3rd ed.) (pp. 574-593). New York, NY: Routledge.

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

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 from http://nepc.colorado.edu/files/NEPC-VirtSchool-2-LB-Bathon.pdf

Carnahan, C., & Fulton, L. (2013). Virtual forgotten: Special education students in cyber schools. *TechTrends, 57*(4), 46-52.

Carr-Chellman, A. A., & Marsh, M. (2009). Pennsylvania cyber school funding: Follow the money. *TechTrends, 53*(4), 49-55.

Electronic Classroom of Tomorrow. (n.d). *Who we are*. Retrieved from http://www.ecotohio.org/WhoWeAre/About

Findlay Digital Academy. (n.d.) *What is FDA*. Retrieved from http://fda.findlaycityschools.org/about.html

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 from http://nepc.colorado.edu/files/NEPC-VirtSchool-1-PB-Glass-Welner.pdf

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

Miron, G., Huerta, L., Cuban, L., Horvitz, B., Gulosino, C., Rice, J. K., & Shafer, S. R. (2013). *Virtual schools in the U.S. 2013: Politics, performance, policy, and research evidence*. Boulder, CO: National Education Policy Center. Retrieved from http://nepc.colorado.edu/publication/virtual-schools-annual-2013

National Forum on Education Statistics. (2006). *Forum guide to elementary/secondary virtual education* (NFES2006-803). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

O'Donnell, P., & Bloom, M. (2012, September 30). How online education is changing school in Ohio. *State Impact NPR*. Retrieved from http://stateimpact.npr.org/ohio/2012/09/30/how-online-education-is-changing-school-in-ohio/

Ohio Alliance for Public Charter Schools. (2009). *E-schools show superior Results: Analysis of state value-added data confirms e-schools students' progress*. Retrieved from http://www.oapcs.org/files/EschoolStudy_final6-24-09.pdf

Ohio Department of Education. (2012). *Opening 5 new e-schools*. Retrieved from http://education.ohio.gov/Topics/School-Choice/Community-Schools/News/Opening-5-New-e-schools

Ohio Report Cards. (2013). 2010-*2012 Guide to understanding Ohio's accountability system*. Retrieved from http://education.ohio.gov/getattachment/Topics/Data/Report-Card/11-12-report-card-guide.pdf.aspx

Ohio Revised Code (O.R.C.) § 3314.

Performance Index. (2013). Ohio Department of Education: Report Card. Retrieved from http://education.ohio.gov/Topics/Data/Report-Card

Rhim, L., & Kowal, J. (2008). *Demystifying special education in virtual charter schools*. Alexandra, VA: Special Education Technical Assistance for Charter Schools Project.

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 from http://www.azcentral.com/news/education/online-school/

Wang, Y., & Decker, J. R. (forthcoming). Examining digital inequities in Ohio's K-12 virtual schools: Implications for educational leaders and policymakers. *International Journal of Education Reform.*

Watson, J., Murin, A., Vashaw, L., Gemin, B., Rapp, C. (2012). *Keeping pace with K-12 online & blended learning: An annual review of policy and practice.* Evergreen Education Group. Retrieved from http://kpk12.com/cms/wp-content/uploads/KeepingPace2012.pdf

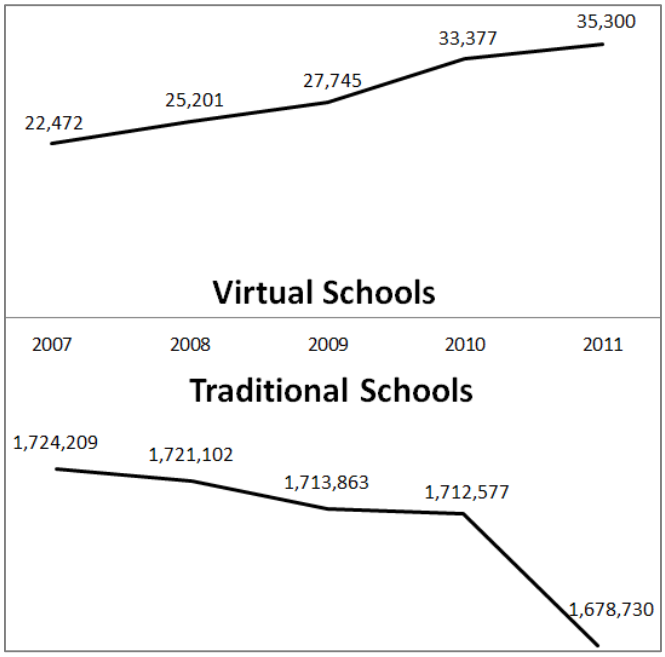

Figure 1. Comparison of Student Enrollment at Ohio's Virtual and Traditional Schools.

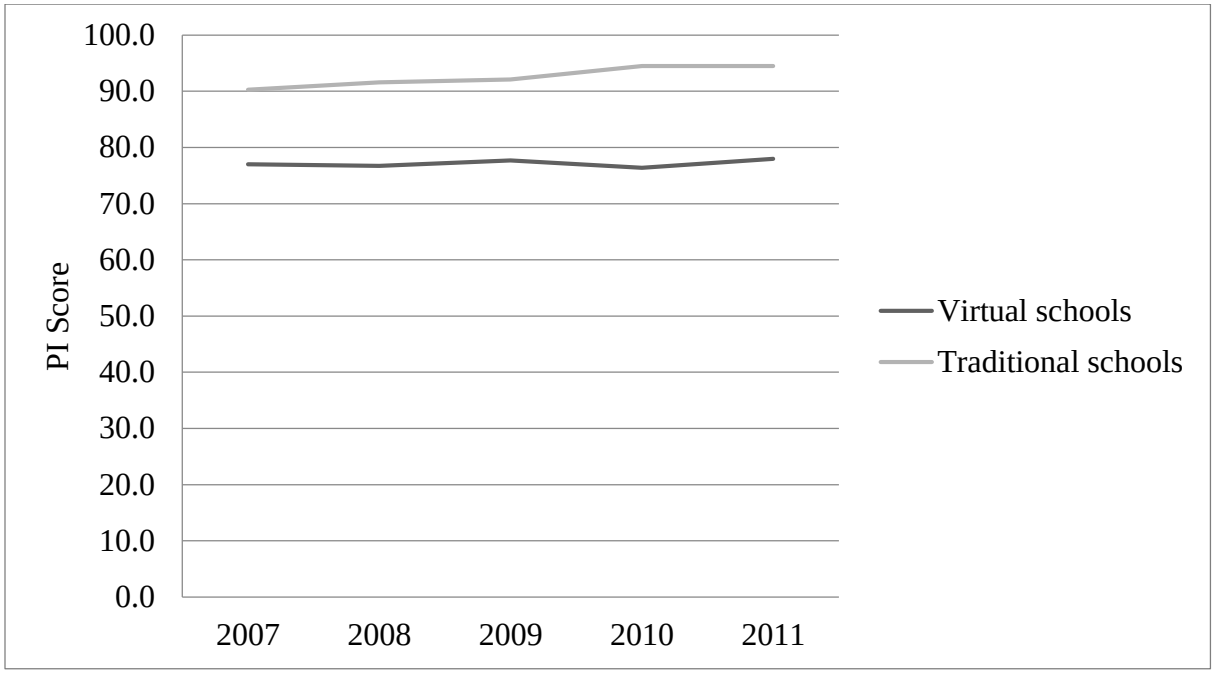

Figure 2. Comparison of PI Scores of Ohio's Virtual and Traditional Schools.

Table 1

School Rating Percentages of Virtual Schools and Traditional (tradtl.) Schools in Ohio

	Excellence with Distinction		Excellent		Effective		Continuous Improvement		Academic Watch		Academic Emergency		Not Rated	
	virtual	tradtl.	virtual	tradtl.	virtual	tradtl.	virtual	tradtl.	virtual	tradtl.	virtual	tradtl.	virtual	tradtl.
2007	0.0	4.2	0.0	30.0	4.0	31.3	36.0	15.6	24.0	6.0	20.0	6.2	16.0	6.7
2008	0.0	5.9	0.0	34.2	8.0	26.8	40.0	15.1	24.0	5.8	16.0	6.2	12.0	6.0
2009	0.0	8.4	3.8	35.0	7.7	24.9	46.2	14.1	15.4	6.0	15.4	5.8	11.5	5.8
2010	0.0	8.8	0.0	40.4	7.4	23.3	25.9	12.0	25.9	5.5	18.5	4.3	22.3	5.7
2011	0.0	13.2	0.0	38.0	7.4	20.9	33.3	11.9	18.5	5.6	14.8	4.8	26.0	5.6

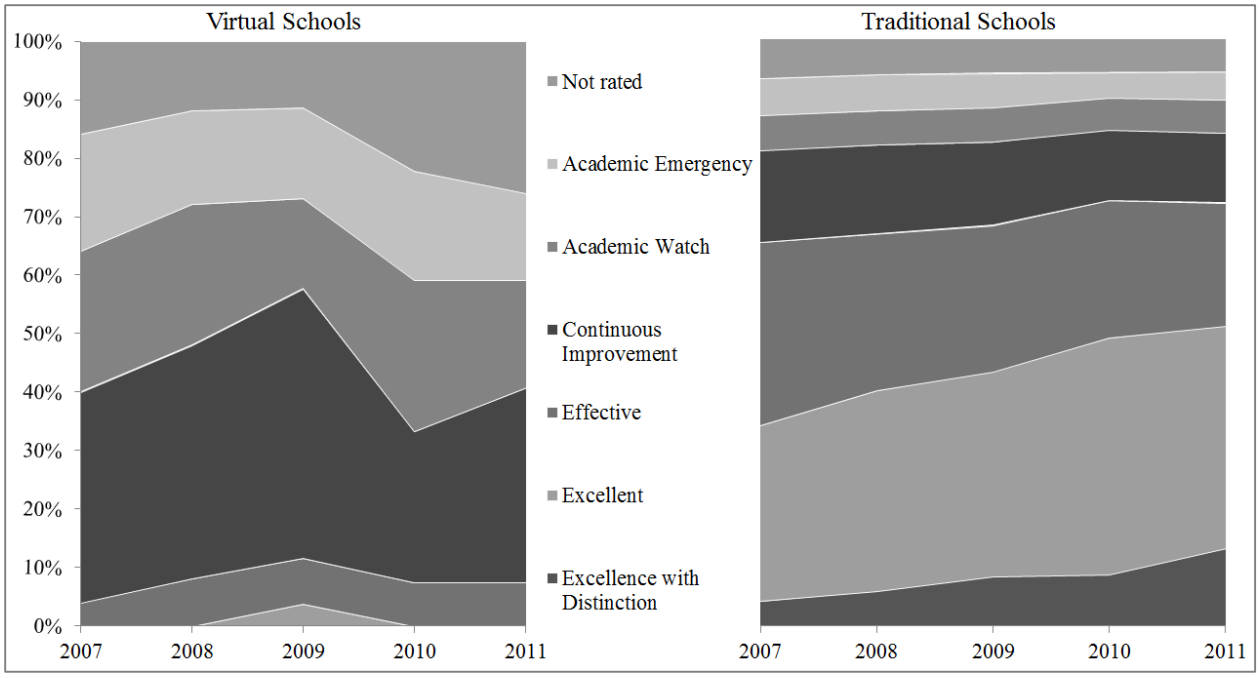

Figure 3. Comparison of school ranking percentages between Ohio's virtual schools and traditional schools from 2007 to 2011.