

# **NEPC Review: Ohio Charter Schools After the Pandemic: Are Their Students Still Learning More Than They Would in District Schools?** **(Thomas B. Fordham Institute, June 2024)**



**Reviewed by:**

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**September 2024**

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# Acknowledgements

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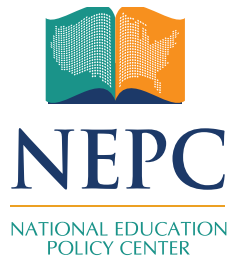
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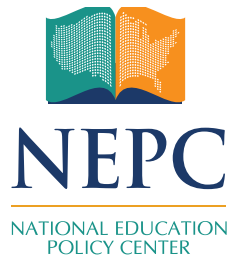
Bryan Mann  
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September 2024

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## Summary

The Fordham Institute recently published a report contending that the state's charter schools have outperformed traditional public schools and implying that they merit continued or expanded state investment. The report's tone is assured, prompting readers to expect an analysis demonstrating substantial, robust evidence on multiple achievement measures. However, the report's evidence does not match its emphatic claims. Instead, it relies on previously critiqued methods and provides findings that lack the strength to suggest meaningful differences between charter and traditional public schools. These findings recycle the flaws of past arguments and offer nothing new to the literature on charter school achievement, and the report is of no use to policymakers.



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## I. Introduction

School choice policies expanded across U.S. during the 2020s,<sup>1</sup> with charter schools (i.e., publicly funded, tuition-free schools, run independently of school districts) among the most popular options. Of the 45 states that enable charter schools, 25 have seen an increase in charter schools and campuses since 2020, while only four have experienced a decrease.<sup>2</sup> Given increasing state investment in charters, understanding their performance is important. Unfortunately, much of the research has been of uneven quality.

Ohio is one of 10 states with the most charter school campuses and students.<sup>3</sup> In the past two years the Thomas B. Fordham Foundation has published three research reports focused on Ohio.<sup>4</sup> NEPC reviewers found that the first two reports (released 2022 and 2024) overstated the implications of the evidence they offered.<sup>5</sup> Their Forewords, written by Fordham Institute staff, mocked the concerns of charter school critics<sup>6</sup> and declared the debate about charter school effectiveness to be over.<sup>7</sup> These assessments are perhaps unsurprising, given that the Fordham Institute staunchly supports school choice. Also unsurprising is that the June 2024 report reviewed here, *Ohio Charter Schools After the Pandemic: Are Their Students Still Learning More Than They Would in District Schools?*,<sup>8</sup> employs statistical analyses to contend that Ohio's charter schools outperform public schools, if perhaps not as well as they did earlier. The report's analyses, however, fail to support the conclusion offered in its Foreword that, ". . . one thing's for sure: Supporting—and investing in—high-quality public charter schools remains a strong, evidence-based approach that Ohio should continue to embrace."<sup>9</sup>

## II. Findings and Conclusions of the Report

The report itself offers three findings that it terms “takeaways”:

1. “Brick-and-mortar charter schools continue to yield greater achievement gains than nearby district schools, but their advantage in English language arts is smaller than in 2018–19.”<sup>10</sup>
2. “Students in brick-and-mortar charter schools experienced large gains on high school exams (relative to students in nearby district schools), which helped sustain the charter advantage since the pandemic.”<sup>11</sup>
3. “Brick-and-mortar charter schools’ achievement advantage in Grades 4–8 appears to be on the rebound.”<sup>12</sup>

As mentioned earlier, the report’s Foreword frames the report by highlighting its claim that charter schools provided roughly 13 extra days of learning in English language arts and nine extra days in math post-pandemic. It concludes that the state’s charter schools are “a strong, evidence-based approach that Ohio should continue to embrace.”<sup>13</sup>

## III. The Report’s Rationale for Its Findings and Conclusions

The report’s findings stem from a primary analysis using Ohio data. Based on a series of regression analyses, it compares Ohio charter school student test scores to those of students in nearby traditional public schools. The report’s analysis, as well as previous reports commissioned by the Fordham Institute, contribute to its findings and to the generalized conclusion that continued investment in charter schools is warranted.

## IV. The Report’s Use of Research Literature

The report fails to meaningfully engage academic literature. It cites support for its methodological choices in isolation, without acknowledging key competing work. In particular, although the “days of learning” conversion<sup>14</sup> is a contested methodological practice, the report does not acknowledge this and/or justify the choice to use this method. One article in a reputable journal in the field goes as far as to say, “We recommend avoiding this translation in all cases, and that consumers of research results look with skepticism towards research translated into units of time.”<sup>15</sup>

Another literature-related flaw is that the report lacks outside research to support its conclusions. For example, the Foreword claims “on average charters delivered superior academic outcomes,” but in support the report cites only a questionable report that has not undergone peer review.<sup>16</sup> Meanwhile, the Summary and Implications section of the report

further this claim in Ohio, saying “the average student in Ohio’s brick-and-mortar charter schools continues to learn more than they would in nearby district schools.”<sup>17</sup> Such claims about Ohio charter schools rely primarily on three of the author’s own reports.<sup>18</sup>

In contrast, years of studies—including one from the National Bureau of Economic Research<sup>19</sup>—show that charter school students perform about the same as traditional public school students.<sup>20</sup> Also important is a shortcoming of the existing literature base: It remains unclear what methodology can reliably identify the specific factors generating positive and negative charter performance within that complex and highly variable sector. This is a crucial barrier in helping policymakers to implement positive practices and remove harmful ones,<sup>21</sup> and one that urges caution about overgeneralizing and overstating findings and conclusions. The report fails to acknowledge this documented difficulty.

## V. Review of the Report’s Methods

The report includes a technical appendix addressing data, variable constructions, and regression modeling strategies, indicating that technical and analytic strategies were appropriate. Nevertheless, the methodology suffers from flaws in the report’s broader conceptual logic:

1. The report compares Ohio charter school student test scores to those of students in nearby traditional public schools. It justifies this strategy with a citation suggesting that geographically proximate schools can serve as comparison groups,<sup>22</sup> but this citation is insufficient because, in fact, geographically proximate schools might not be comparable. While it’s possible the student bodies may be similar, research has found an emerging trend of gentrifying families choosing a charter school rather than leaving the city for the suburbs, possibly skewing the demographic profile of a nearby school.<sup>23</sup> But the report reflects no effort to report demographic profiles of districts or charters, and no effort or way to control for student-level traits. Instead, it simply weights schools by enrollment, assuming this is a sufficient means to determine comparability.<sup>24</sup> At the very least, the report should have included descriptions of schools’ composition or indicated a check for the robustness of findings using other strategies, such as statistical matching strategies, to alleviate these concerns. (An even more advantageous approach, though likely unavailable due to data constraints, would have been employing student-level datasets.)
2. Related to the report’s comparative approach is a likely inconsistency in how virtual learning is included (or not) for public compared to charter schools. Traditional public schools often fold full-time virtual learning outcomes into their brick-and-mortar test score reporting.<sup>25</sup> In Ohio, virtual charter schools perform chronically lower than traditional public schools.<sup>26</sup> In the analysis, the traditional public schools likely are reporting test scores of virtual students while virtual charter schools are excluded, making the claim of comparing sectors invalid.

3. As noted earlier, scholars argue against using the “days of learning” conversion,<sup>27</sup> which leads to misleading interpretations. The conversion produces larger numbers in the imagination of readers, inflating their perceptions of otherwise small effect size numbers.<sup>28</sup>
4. The analysis focuses on a narrow definition of achievement. The 4–8 analysis focuses on annual math, ELA, and science test scores; high school scores also include government and history. However: The singular reliance on test scores in these subjects does not give a complete account of a school and its operation—or of student learning. Other measures could include school climate, resources, student and staff well-being, and additional measures of academic learning such as college-going rates and engagement in school.<sup>29</sup> While this is a common flaw in school assessment literature, that doesn’t mean the problem is not meaningful and can be ignored.

## VI. Review of the Validity of the Findings and Conclusions

The report overstates the robustness of its coefficients. Even if the methodology were accepted as completely sound, the analysis provides little reason to conclude that Ohio charter schools outperform traditional public schools. Instead, findings warrant the more grounded observation that there is little difference between sectors.

Regarding finding one: The report states, “brick-and-mortar charter schools continue to yield greater achievement gains than nearby district schools.”<sup>30</sup> However, Figure 1 actually shows that in Grades 4–8, of the six 2021-22 and 2022-23 findings (one for each year for ELA, math, and science) the coefficient sizes are small (and one is negative). Five fail to achieve the modest  $<0.05$  level of statistical significance. Figure 2 on Grades 4–8 shows that all three coefficients have no statistical significance when pooling the years; again, the effects are small, and one is negative.

Regarding finding two: The report states, “students in brick-and-mortar charter schools experienced large gains on high school exams.”<sup>31</sup> However, Figure 3 shows that the gains are actually small. The report itself concedes that “the high school estimates appear much larger” due to the cumulative nature of the high school tests they report upon. Four out of the five coefficients are statistically significant in high school years, but the coefficients are small.

Regarding finding three: The report states, “brick-and-mortar charter schools’ achievement advantage in Grades 4–8 appears to be on the rebound.”<sup>32</sup> But Figure 4 actually shows that two of these coefficients went from statistically insignificant and small negative coefficients to statistically insignificant small positive coefficients. In contrast, one went from statistically insignificant and small positive coefficients to zero. There is hardly sufficient evidence to declare a “rebound.”

More generally, the comparative approach used in this report offers no insight into the *reasons* for any differences in scores—and the reasons are all-important. Numerous mechanisms could cause charter schools to perform better but would still not support charter



school expansion. For example, even if the analysis controls for selection bias in individual student achievement, peer effects (the composition and consequent dynamics of how a student group affects individual learning) might cause higher achievement in the charter schools studied. If the schools were scaled up, though, those dynamics would likely change. Or, high test scores might be caused by “teaching to the test” that provides no meaningful learning other than test preparation.<sup>33</sup> Or, unrecognized funding not accounted for in funding formulas such as donations might shape performance.<sup>34</sup> These are a few examples that emphasize that test score comparisons cannot provide the causal information necessary to inform policy decisions.

Given all of the above, the sweeping conclusion in the Foreword is exaggerated: “. . . but one thing’s for sure: Supporting—and investing in—high-quality public charter schools remains a strong, evidence-based approach that Ohio should continue to embrace.”<sup>35</sup> Neither the report’s findings nor other prior research provides strong evidence of success. And even if results had been robustly positive, they still would not support this assertion. Beyond a school’s designation as charter or traditional, many factors drive effects in ways not yet fully understood. Without knowing what specific traits or mechanisms lead to specific outcomes, as well as what the positive and negative aspects of those factors are, wholesale endorsement of one sector over another is unfounded.

## **VII. Usefulness of the Report for Guidance of Policy and Practice**

The lack of evidence detailed above means that the report has no utility for policymakers, who continue to expand the charter system.<sup>36</sup> While there are undoubtedly high-performing charter schools just as there are high-performing public schools, the effort, energy, and political capital spent on expanding the sector could be better spent elsewhere—especially by inquiring into the mechanisms that lead to successful practice in both sectors.



## Notes and References

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- 1 Clarey, B. (2023, May). School choice bills have swept the nation. Where does your state stand on the issue? *ChalkboardNEWS*. Retrieved May 5, 2024, from [https://www.chalkboardnews.com/issues/school-choice/school-choice-bills-have-swept-the-nation-where-does-your-state-stand-on-the-issue/article\\_95aeb6bb-356a-51e5-86c8-dbdb5ae9ce34.html](https://www.chalkboardnews.com/issues/school-choice/school-choice-bills-have-swept-the-nation-where-does-your-state-stand-on-the-issue/article_95aeb6bb-356a-51e5-86c8-dbdb5ae9ce34.html)
- 2 National Center for Education Statistics (n.d). *Charter schools. Fast facts*. Retrieved May 1, 2024, from <https://nces.ed.gov/fastfacts/display.asp?id=30#:~:text=Forty%2Dfive%20states%20and%20the,South%20Dakota%2C%20and%20Vermont>  
  
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- 3 White, J. (2023, December). *How many charter schools and students are there?* National Alliance for Public Charter Schools. Retrieved August 8, 2024, from <https://data.publiccharters.org/digest/charter-school-data-digest/how-many-charter-schools-and-students-are-there/>
- 4 Lavertu, S. & Gregg, J.J. (2022, December). *The Ohio EdChoice program's impact on school district enrollments, finances and academics*. Columbus, OH: Thomas B. Fordham Institute. Retrieved August 19, 2024, from <https://fordhaminstitute.org/ohio/research/ohio-edchoice-programs-impact-school-district-enrollments-finances-and-academics>  
  
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Lavertu, S. (2024, June). *Ohio charter schools after the pandemic: Are their students still learning more than they would in district schools?* Columbus, OH: Thomas B. Fordham Institute. Retrieved August 1, 2024, from <https://fordhaminstitute.org/ohio/research/ohio-charter-schools-after-pandemic-are-their-students-still-learning-more-they-would>
- 5 Joshua Cowen, in an NEPC review of the 2022 report, found that it not only overstated its results, but that it also ignored major criticisms of voucher programs. The review concluded that the report primarily “served to provide new data for policymakers already predisposed to support vouchers, while adding little to assuage the fears of voucher opponents.”  
  
My review of the March 2024 report concluded that “the report misuse[d] its limited findings to declare that debate ‘over.’”  
  
Cowen, J. (2023). *NEPC review: The Ohio EdChoice program's impact on school district enrollments, finances and academics* (p. 5). Boulder, CO: National Education Policy Center. Retrieved August 19, 2024, from <https://nepc.colorado.edu/thinktank/edchoice>  
  
Mann, B. (2024). *NEPC review: Did the emergence of Ohio charter schools help or harm students who remained in district schools?* (p. 3). National Education Policy Center. Retrieved August 27, 2024, from <http://nepc.colorado.edu/review/ohio-charters>
- 6 “‘The sky is falling,’ cry the Chicken Little critics of Ohio’s choice programs.”  
  
Churchill, A. & Aldis, C.L. (2022, December). Foreword to Stéphane Lavertu and John Jay Gregg, *The Ohio EdChoice program's impact on school district enrollments, finances and academics* (p. 3). Columbus, OH: Thomas B. Fordham Institute. Retrieved August 19, 2024, from <https://fordhaminstitute.org/ohio/research/>

- 7 “It’s time that we finally put to rest the tired canard that school choice hurts traditional public schools.”

Churchill, A. (2024, March). Foreword to Stéphane Lavertu, *Did the emergence of Ohio charter schools help or harm students who remained in district schools?* (p. 2). Columbus, OH: Thomas B. Fordham Institute. Retrieved May 1, 2024, from <https://fordhaminstitute.org/ohio/research/did-emergence-ohio-charter-schools-help-or-harm-students-who-remained-district>

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- 9 Churchill, A. (2024, June). Foreword to Stéphane Lavertu, *Ohio charter schools after the pandemic: Are their students still learning more than they would in district schools?* (p. 2). Columbus, OH: Thomas B. Fordham Institute. Retrieved August 1, 2024, from <https://fordhaminstitute.org/ohio/research/ohio-charter-schools-after-pandemic-are-their-students-still-learning-more-they-would>

- 10 Lavertu, S. (2024, June). *Ohio charter schools after the pandemic: Are their students still learning more than they would in district schools?* (p. 5). Columbus, OH: Thomas B. Fordham Institute. Retrieved August 1, 2024, from <https://fordhaminstitute.org/ohio/research/ohio-charter-schools-after-pandemic-are-their-students-still-learning-more-they-would>

- 11 Lavertu, S. (2024, June). *Ohio charter schools after the pandemic: Are their students still learning more than they would in district schools?* (p. 6). Columbus, OH: Thomas B. Fordham Institute. Retrieved August 1, 2024, from <https://fordhaminstitute.org/ohio/research/ohio-charter-schools-after-pandemic-are-their-students-still-learning-more-they-would>

- 12 Lavertu, S. (2024, June). *Ohio charter schools after the pandemic: Are their students still learning more than they would in district schools?* (p. 8). Columbus, OH: Thomas B. Fordham Institute. Retrieved August 1, 2024, from <https://fordhaminstitute.org/ohio/research/ohio-charter-schools-after-pandemic-are-their-students-still-learning-more-they-would>

- 13 Churchill, A. (2024, June). Foreword. (p. 2). *Ohio charter schools after the pandemic: Are their students still learning more than they would in district schools?* (p. 5). Columbus, OH: Thomas B. Fordham Institute. Retrieved August 1, 2024, from <https://fordhaminstitute.org/ohio/research/ohio-charter-schools-after-pandemic-are-their-students-still-learning-more-they-would>

- 14 Lavertu, S. (2024, June). *Ohio charter schools after the pandemic: Are their students still learning more than they would in district schools?* (pp. 5, 2). Columbus, OH: Thomas B. Fordham Institute. Retrieved August 1, 2024, from <https://fordhaminstitute.org/ohio/research/ohio-charter-schools-after-pandemic-are-their-students-still-learning-more-they-would>

- 15 The way this measure is created is, as the report explains in a footnote, “students typically experience annual achievement gains of 0.286 standard deviations in reading and 0.369 standard deviations in math in grades 4–10. Dividing the estimates in Figure 1 by these typical growth rates yields the fraction of a school year, which can then be multiplied by 180 (the typical number of instructional days in a school year) to calculate the equivalent number of days of additional learning.”

This approach is problematic, as it uses a process by estimating days of learning based on assumed annual growth rates and the average number of school days. If the report truly wanted to capture “additional days of learning” it would derive a measure from a study that compares schools that actually had longer school years or hours in a day than other schools, which would allow to quantify the effect size per day of an intervention that added days to the school year rather than the standard 180 days. Baird and Pane point to problems like

these and more and emphatically argue against using the “days of learning” conversion.

Baird, M.D. & Pane, J.F. (2019). Translating standardized effects of education programs into more interpretable metrics (p. 227). *Educational Researcher*, 48(4), 217-228. Retrieved August 10, 2024, from <https://doi.org/10.3102/0013189X19848729>

- 16 Raymond, M.E., Woodworth, J.L., Lee, W.F., & Bachofer, S. (2023, June). *As a matter of fact: The national charter school study III*. Center for Research on Education Outcomes (CREDO). Retrieved August 10, 2023, from <https://ncss3.stanford.edu/wp-content/uploads/2023/06/Credo-NCSS3-Report.pdf>

For a critique of the report, refer to a 2023 NEPC review:

Ferrare, J. (2023, June). *NEPC review: As a matter of fact: The national charter school study III*. Boulder, CO: National Education Policy Center. Retrieved August 10, 2024, from [https://nepc.colorado.edu/sites/default/files/reviews/NR%20Ferrare\\_o.pdf](https://nepc.colorado.edu/sites/default/files/reviews/NR%20Ferrare_o.pdf)

- 17 Lavertu, S. (2024, June). *Ohio charter schools after the pandemic: Are their students still learning more than they would in district schools?* (p. 11). Columbus, OH: Thomas B. Fordham Institute. Retrieved August 1, 2024, from <https://fordhaminstitute.org/ohio/research/ohio-charter-schools-after-pandemic-are-their-students-still-learning-more-they-would>

- 18 Lavertu, S. (2020, October). *The impact of Ohio charter schools on student outcomes, 2016–19*. Columbus, OH: Thomas B. Fordham Institute. Retrieved August 16, 2024, from <https://fordhaminstitute.org/sites/default/files/publication/pdfs/impact-ohio-charter-schools-student-outcomes-web-version.pdf>

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- 19 Cohodes, S. & Parharm, K. (2021, May). *Charter schools’ effectiveness, mechanisms, and competitive influence*. Washington, DC: National Bureau of Economic Research. Retrieved August 10 2024, from <https://www.nber.org/papers/w28477>

- 20 Below are some examples of prominent studies, meta analyses, and literature reviews on charter schools during the past 20 years from various locations around the United States. They echo results showing charter schools perform about the same as traditional public schools.

Sass, T. (2006, January). Charter schools and student achievement in Florida. *Education Finance and Policy*, 1(1), 91-122. Retrieved August 8, 2024, from <https://doi.org/10.1162/edfp.2006.1.1.91>

Booker, K., Gilpatric, S., Gronberg, T., & Jansen, D. (2007, June). The impact of charter school attendance on student performance. *Journal of Public Economics*, 91(5-6), 849-876. Retrieved August 8, 2024, from <https://doi.org/10.1016/j.jpubeco.2006.09.011>

Zimmer, R., Gill, B., Booker, K., Lavertu, S., Sass, T., & Witte, J. (2009, March). *Are charter schools making a difference? A study of student outcomes in eight states*. Santa Monica, CA: RAND Corporation. Retrieved August 8, 2024, from [https://www.rand.org/pubs/research\\_briefs/RB9433.html](https://www.rand.org/pubs/research_briefs/RB9433.html)

Berends, M., Goldring, E., Stein, M., & Cravens, X. (2010, May). Instructional conditions in charter schools and students' mathematics achievement gains. *American Journal of Education*, 116(3), 303-335. Retrieved August 8, 2024, from <https://doi.org/10.1086/651411>

Betts, J. & Tang, E. (2011, October). *The effect of charter schools on student achievement: A meta-analysis of the literature*. Bothell, WA: Center on Reinventing Public Education. Retrieved August 8, 2024, from <http://files.eric.ed.gov/fulltext/ED526353.pdf>

Berends, M. (2015, August). Sociology of school choice: What we know after two decades of charter schools. *Annual Review of Sociology*, 41, 159-180. Retrieved August 8, 2024, from <https://doi.org/10.1146/annurev-soc-073014-112340>

Clark, M., Gleason, P., Tuttle, C., & Silverberg, M.K. (2015, December). Do charter schools improve student achievement? *Educational Evaluation and Policy Analysis*, 37(4), 419-436. Retrieved August 8, 2024, from <https://doi.org/10.3102/0162373714558292>

Cohodes, S. & Parharm, K. (2021, May). *Charter schools' effectiveness, mechanisms, and competitive influence*. Washington, DC: National Bureau of Economic Research. Retrieved August 10 2024, from <https://www.nber.org/papers/w28477>

Cohodes, S. & Roy, S. (2024, August). Thirty years of charter schools: What does lottery-based research tell us? *Journal of School Choice*, published online ahead of print (1-42). Retrieved August 8, 2024, from <https://doi.org/10.1080/15582159.2024.2379644>

21 For a better understanding of this issue, see:

Dallavis, J.W. & Berends, M. (2023). Charter schools after three decades: Reviewing the research on school organizational and instructional conditions. *Education Policy Analysis Archives*, 31(1). Retrieved August 23, 2024, from <https://epaa.asu.edu/index.php/epaa/article/view/7364>

22 Bifulco, R. (2012). Can nonexperimental estimates replicate estimates based on random assignment in evaluations of school choice? A within-study comparison. *Journal of Policy Analysis and Management*, 31(3), 729-751. Retrieved August 10, 2024, from <https://doi.org/10.1002/pam.20637>

23 Research on parent gentrifiers and their decisions between schools of choice and moving to the suburbs is emerging. See, for example: Butler, A. (2021, August). What's best for my child, what's best for the city: Values and tensions in parent gentrifiers' middle and high school selection processes. *The Urban Review*, 54(2), 255-276. Retrieved August 16, 2024, from <https://doi.org/10.1007/s11256-021-00614-1>

24 It's possible that student bodies might appear comparable in terms of economic status or parental background, if not in race. The broader point here is that there are almost certainly selection effects. Even if these are controlled for at the individual level, the selection effect could occur at the group level and shape educational outcomes through peer effects in different student bodies.

25 This is a difficult trend to track because if a virtual school is folded into a traditional school, then it does not show up in state reporting as a virtual school. Qualitative and survey evidence suggests that this trend is common. For example, in Pennsylvania a representative survey of 188 districts showed that an overwhelming majority (more than 80 percent) of districts created a fulltime online school, despite official data suggesting only the larger districts in the state reporting a standalone virtual school. These findings are reported in the article:

Mann, B. (2019, January). Compete, conform, or both? School district responses to statewide cyber charter schools. *Journal of School Choice*, 14(1), 49-74. Retrieved August, 10, 2024, from <https://doi.org/10.1080/15582159.2019.1566996>

26 The most recent study in Ohio is:

Ahn, J. & McEachin, A. (2017). Student enrollment patterns and achievement in Ohio's online charter schools. *Educational Researcher*, 46(1), 44-57. Retrieved May 30, 2024, from <https://journals.sagepub.com/doi/10.3102/0013189X17692999>

Evidence about cyber charter's negative performance continually shows negative outcomes. The most recent study is on Pennsylvania, which continues to capture a trend of worse academic outcomes in these schools:

Cordes, S.A. (2024). Cyber versus brick and mortar: Achievement, attainment, and postsecondary outcomes in Pennsylvania charter high schools. *Education Finance and Policy*, 19(3), 361-384. Retrieved September 2, 2024, from [https://doi.org/10.1162/edfp\\_a\\_00399](https://doi.org/10.1162/edfp_a_00399)

- 27 Baird, M.D. & Pane, J.F. (2019). Translating standardized effects of education programs into more interpretable metrics. *Educational Researcher*, 48(4), 217-228. Retrieved August 5, 2024, from <https://doi.org/10.3102/0013189X19848729>

- 28 The way this measure is created is, as the report explains in a footnote, "students typically experience annual achievement gains of 0.286 standard deviations in reading and 0.369 standard deviations in math in grades 4-10. Dividing the estimates in Figure 1 by these typical growth rates yields the fraction of a school year, which can then be multiplied by 180 (the typical number of instructional days in a school year) to calculate the equivalent number of days of additional learning."

This approach is problematic, as it uses a process by estimating days of learning based on assumed annual growth rates and the average number of school days. If the report truly wanted to capture "additional days of learning" it would derive a measure from a study that compares schools that actually had longer school years or hours in a day than other schools, which would allow to quantify the effect size per day of an intervention that added days to the school year rather than the standard 180 days. Baird and Pane point to problems like these and more and emphatically argue against using the "days of learning" conversion.

Baird, M.D., & Pane, J.F. (2019). Translating standardized effects of education programs into more interpretable metrics. (p. 227). *Educational Researcher*, 48(4), 217-228. Retrieved August 10, 2024, from <https://doi.org/10.3102/0013189X19848729>

- 29 Schneider, J. (2017). *Beyond test scores: A better way to measure school quality*. Cambridge, MA: Harvard University Press.
- 30 Lavertu, S. (2024, June). *Ohio charter schools after the pandemic: Are their students still learning more than they would in district schools?* (p. 5). Columbus, OH: Thomas B. Fordham Institute. Retrieved August 1, 2024, from <https://fordhaminstitute.org/ohio/research/ohio-charter-schools-after-pandemic-are-their-students-still-learning-more-they-would>
- 31 Lavertu, S. (2024, June). *Ohio charter schools after the pandemic: Are their students still learning more than they would in district schools?* (p. 6). Columbus, OH: Thomas B. Fordham Institute. Retrieved August 1, 2024, from <https://fordhaminstitute.org/ohio/research/ohio-charter-schools-after-pandemic-are-their-students-still-learning-more-they-would>
- 32 Lavertu, S. (2024, June). *Ohio charter schools after the pandemic: Are their students still learning more than they would in district schools?* (p. 8). Columbus, OH: Thomas B. Fordham Institute. Retrieved August 1, 2024, from <https://fordhaminstitute.org/ohio/research/ohio-charter-schools-after-pandemic-are-their-students-still-learning-more-they-would>
- 33 Jennings, J. & Bearak, J.M. (2014, November). "Teaching to the test" in the NCLB era: How test predictability affects our understanding of student performance. *Educational Researcher*, 43(8), 381-389. Retrieved August 16, 2024, from <https://doi.org/10.3102/0013189X14554449>
- 34 Ferrare, J. & Setari, R.R. (2017, November). Converging on choice: The interstate flow of foundations dollars

to charter school organizations. *Educational Researcher*, 47(1), 34-45. Retrieved August 14, 2024, from <https://doi.org/10.3102/0013189X17736524>

- 35 Churchill, A. (2024, June). Foreword (p. 2). *Ohio charter schools after the pandemic: Are their students still learning more than they would in district schools?* (p. 5). Columbus, OH: Thomas B. Fordham Institute. Retrieved August 1, 2024, from <https://fordhaminstitute.org/ohio/research/ohio-charter-schools-after-pandemic-are-their-students-still-learning-more-they-would>
- 36 Churchill, A. (2023, July). *Ohio lawmakers pass historic policies on charter schools, private school choice, governance, and literacy?* Columbus, OH: Thomas B. Fordham Institute. Retrieved August 1, 2024, from <https://fordhaminstitute.org/ohio/commentary/ohio-lawmakers-pass-historic-policies-charter-schools-private-school-choice>