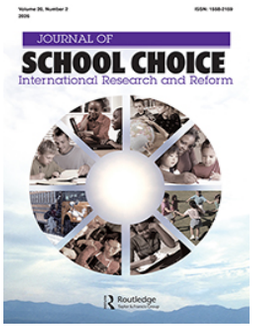

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Private School Choice and Student Performance in English/Language Arts: Evidence from Wisconsin's Parental Choice Programs

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ABSTRACT

This study examines the association between participation in Wisconsin's private school choice programs and English Language Arts achievement using longitudinal administrative data from 96,241 students tested in 2018–2019 and 2022–2023. Propensity score matching compares voucher participants with similar public-school students, with exposure measured by years of participation. Sustained participation is positively associated with achievement growth. Statewide program participants gained approximately 0.14 standard deviations overall and 0.35 standard deviations after four or more years. Similar patterns appear in Racine. Findings suggest evaluations of school choice should emphasize long-term participation rather than short-term outcomes alone.

KEYWORDS

Educational policy; private schools; propensity score matching; school choice; vouchers

Introduction

Across the United States, school districts are actively exploring and implementing school choice policies that provide more educational options (Berends, 2021). The possibilities range from new charter school legislation to full voucher programs (Angrist et al., 2013; Epple et al., 2017) and even broader options like Education Savings Accounts (Ladner, 2012). Effective policymaking calls for evaluation of new efforts as evidence becomes available. This research aids in that evaluation by providing the first quasi-experimental analysis of student outcomes in two newer school choice programs in Wisconsin: the Racine Parental Choice Program (RPCP) and the Wisconsin Parental Choice Program (WPCP).

We address three primary questions in this study. First, is participation in Wisconsin's private school choice programs associated with greater growth in English Language Arts achievement than remaining in traditional public schools? Second, does longer exposure to private school choice participation produce larger gains? Third, are the observed patterns similar across Wisconsin's two newer voucher programs, RPCP and WPCP? We address these questions and then show the results of robustness checks of our findings.

School choice in Wisconsin

Wisconsin was an early leader in school choice, with Milwaukee adopting the nation's first private school voucher program in 1990. Racine followed in 2011, and then in 2013 school choice became available statewide. The statewide program serves 1.95% of students statewide, while Racine's program serves 18.96% (Table 1) of the district's students. The programs were controversial from the start, making sound evaluation data especially important for policymakers, educators, and the public (Cowen et al., 2013). A comprehensive evaluation of Milwaukee's program, under the University of Arkansas' School Choice Demonstration Project (SCDP), resulted in 36 reports released from 2007 to 2012. These reports covered effects on individual achievement as well as community and system effects (Wolf, 2012).

The statewide program (WPCP) and Racine program (RPCP) have never been subject to an evaluation as comprehensive as that of the Milwaukee program (MPCP). These programs are of interest to education

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Table 1. Details of each school choice program.

	RPCP	WPCP	MPCP (Not part of study)
Region Covered	Racine Unified School District	Remainder of the state other than City of Milwaukee, RUSD	City of Milwaukee
Student Population (2022–2023)	3,788	16,419	27,773
Percent in Choice (Choice + Public)	18.96%	1.95%	29.10%
Income Limit	300% of Federal Poverty Limit	220% of Federal Poverty Limit	300% of Federal Poverty Limit
Enrollment Limit	No Limit	7% of Public School District	No limit
Voucher Payments		$8,399 for K-8; $9,045 for 9–12	

scholars because they expanded school choice access beyond the concentrated poverty and heavily African American population of Milwaukee to other parts of the state with different demographic mixes. The programs are still income-limited to students within 220% of the federal poverty limit in the WPCP and 300% in Racine. At the time of the analysis, the WPCP still had a cap on enrollment that was a percentage of total public school enrollment in each district. Though few districts have reached these caps, enrollment in the statewide program has grown rapidly from 499 students in the 2013–2014 school year to 16,419 in the 2022–2023 school year that is the final year of this analysis. The Racine program has grown more slowly and served 3,788 students in the 2022–2023 school year. Private schools wishing to participate in Wisconsin's choice programs must meet a set of statutory requirements, including state accreditation, administration of the Wisconsin Forward Exam, compliance with health and safety regulations, and submission to financial audits once enrollment exceeds specified thresholds (Wisconsin Department of Public Instruction, 2022). With some exception for high school students, the voucher must be taken as the full cost of tuition by the school. Table 1 summarizes some of the key aspects of the programs. The MPCP is included for comprehensiveness, though it is not part of this study.[1]

Our study follows up in the spirit of the SCDP while expanding the scope to evaluate the other programs that have come into existence since this research was undertaken. We consider the RPCP and WPCP programs separately due primarily to differences in when the programs started and variation in income limits.

Existing research

Although this study does not attempt a comprehensive overview of the rapidly evolving choice landscape, it is important to situate Wisconsin's programs within current national debates. Over the past 5 years, several states have moved toward universal or near-universal eligibility for private school choice through vouchers or education savings accounts (ESAs), fundamentally altering the scope and scale of these policies (Berends, 2021; Epple et al., 2017).

While eligibility thresholds have increased over time, the WPCP and RPCP remain targeted rather than universal, distinguishing them from more recent voucher and education savings account (ESA) programs adopted in other states (Berends, 2021; Epple et al., 2017).

Participating schools include a mix of secular and religious institutions and vary widely in size, grade configuration, and instructional approach. Prior research on Milwaukee's program suggests that schools opting into voucher programs are not a random subset of private schools, but rather those with sufficient administrative capacity, willingness to comply with state oversight, and demand from eligible families (Cowen et al., 2013; Wolf, 2012). These same selection dynamics likely operate in the statewide and Racine programs, shaping both who participates and the educational environments experienced by voucher students.

The WPCP, in particular, represented a substantial expansion of private school choice beyond Milwaukee when it went statewide in 2013, allowing eligible students across Wisconsin to participate. Over time, eligibility thresholds have been raised and enrollment caps relaxed, resulting in steady growth in participation (Cowen et al., 2013; Wolf, 2012). The RPCP followed a similar trajectory within Racine Unified School District. These incremental expansions provide an informative contrast to contemporary policy proposals advocating rapid movement to universal eligibility. Evidence from Wisconsin's longer-

running, scaled programs helps inform current debates by illustrating how academic outcomes evolve as choice programs mature, expand geographically, and serve a broader cross-section of students.

Recent research has documented sectoral differences in student outcomes during and after the COVID-19 pandemic, with several studies finding that private school students experienced smaller learning disruptions or more rapid academic recovery than their public school peers (e.g., Ponisciak & Dallavis, 2023). This literature is particularly relevant given that our analysis spans the 2018–2019 to 2022–2023 period, encompassing both pandemic-related school closures and subsequent recovery years. Our findings of positive associations between sustained exposure to private school choice and English Language Arts achievement growth should therefore be interpreted within this broader post-pandemic context.

Extensive research has examined the MPCP, making it one of the most studied voucher programs in the United States. Early evaluations produced mixed findings, with small or statistically insignificant achievement effects in the short term, particularly in reading, but later longitudinal analyses have documented positive impacts on longer-term outcomes such as high school graduation, college enrollment, and attainment (Chingos & Petersen, 2015; Cowen et al., 2013; Wolf, 2012) and even criminal activity (DeAngelis & Wolf, 2020). These results have contributed to a broader consensus that the benefits of voucher programs may emerge more clearly over extended periods of exposure rather than immediately following program entry. That said, studies of other voucher programs have produced a mixed bag on academic benefits with some finding positive results (Egalite et al., 2020; Wolf et al., 2013) and at least a few finding negative results (Abdulkadiroğlu et al., 2018).

By building on the extensive Milwaukee literature while focusing on newer and less-studied programs, this article contributes to the broader evidence base on private school choice in Wisconsin. The statewide and Racine programs differ from Milwaukee's program in both scale and demographic composition, offering insight into how voucher effects manifest as programs expand geographically and serve populations with different baseline characteristics. In doing so, this analysis complements prior Milwaukee-focused studies and provides evidence that is particularly relevant to contemporary debates about statewide and expanded choice programs (Berends, 2021; Epple et al., 2017).

Methods

The Wisconsin data set

This study used data from the Wisconsin Department of Public Instruction, including all students in tested grades across sectors in Wisconsin schools during the 2018–2019 school year and the 2022–2023 school year. For analysis, we required that students have a score on the DPI's exam in English/Language Arts (ELA) for both 2018–2019 and 2022–2023. We focus on a four-year time frame rather than a more granular analysis of 1, 2 and 3 year changes because most existing research on school choice suggests longer-term exposure is necessary for benefits to accrue, if they accrue at all (e.g., Shakeel et al., 2021; Wolf, 2012).

Forward Exam testing for ELA in Wisconsin occurs in grades 3 through 8. Thus, our sample includes students who didn't "age out" of testing during the time frame and took the test in the initial year – those in third or fourth grade in 2018, along with a small number (86) fifth graders who were held back at some point. Students who changed districts or school sectors within Wisconsin during the period of analysis were still tracked by DPI and could be included. If they moved out of state, they could not.

The key statistical challenge arises from the fact that, for most programs including Wisconsin's, families opt in for school choice. This choice introduces confounders, systematic differences between those who opt in and those who do not.

In this study, like others before where randomization into choice programs is not possible (Cowen et al., 2013; Waddington & Berends, 2018), propensity score matching was used. The propensity score matching approach compares choice participants to observationally similar students in the public sector over the same time period, thereby capturing relative differences in achievement growth during and after the pandemic (Austin, 2009; Munteanu, 2024; Yang et al., 2019). For each student, we generate a propensity score, best thought of as a probability of attending a choice school for a specific number of years during the period of analysis. To make sure they are very much alike, we use a caliper width of 0.05. This strict cutoff means that only students with highly similar characteristics are matched and included in our results.

Table 2. Number of students "treated" at each level.

Treatment Level	Treated (WPCP)	Treated (RPCP)
4+ years	359	334
3 years	207	92
2 years	185	64
1 year	170	40
Any Treatment	921	530

We examine each level of treatment in a separate matching analysis. Students at other levels of exposure to school choice are excluded from each. In other words, a student who has 4 years in school choice is not included in the 3-, 2-, or 1-year treatment match. The number of students in each treatment group is reported in Table 2. Note that balance issues in the RPCP (discussed later) were too pervasive to include the subset count-of-years exposure results in the main paper. However, the number of treated students at each level is reported here and the results of the analysis for each level of choice exposure in Racine are reported in the appendix.

The control group had no years of exposure to private school choice in any of the main analyses. They consist of public school students weighted by their propensity to have been enrolled in private school choice, with higher weights given to those students with a higher likelihood. Students in Wisconsin charter schools do constitute a small percentage of the sample. Because charter schools are often characterized as public schools, there are sound arguments for including and for excluding them. Appendix Table A6 reports the main results excluding students who spent more than 2 years in charters during the time frame, which does not change the findings significantly.

We report results for each level of treatment. The primary outcome of interest was the change in scores on the Wisconsin Forward Exam in English Language Arts from the baseline year (2018) to the final year (2022). This exam has a score range of 330 to 970 (Wisconsin Department of Public Instruction, 2022). It was standardized into *z*-scores using the mean and standard deviation across the treatment and control sample to have a mean of about 0 and a standard deviation of about 1.

Covariates

To estimate propensity scores, we included covariates theorized to affect the likelihood that a student's family would participate in a school choice program. These included the race or ethnicity of the student, the student's sex, and low-income status as identified by eligibility for free-and-reduced lunch in 2018. The student's scale score on the 2018 administration of the test was also included in the matching algorithm. In addition, we accounted for whether the student was receiving English Language Learner (ELL) services in 2018 and the student's grade level during that year.

The region variable

Because there were not sufficient choice students in every school district to match students, a *Region* variable was created to represent each student's 2018 location within larger geographic units: southeast, western, northwestern, northern and Fox River Valley. The northwest region is the excluded reference group. These larger units are based on combinations of Cooperative Education Service Agencies in the state. These CESAs are larger collections of school districts that collaborate in areas such as shared services and professional development. Note that the Milwaukee Public School District is excluded from the southeast region in this analysis. Figure 1 displays the regions used for matching in our analysis.

The inclusion of the region variable, along with pretest scores, is consistent with the work of Bifulco (2012). Bifulco found that analyzing the data in this manner approximated experimental results for situations where true randomization may not be possible. While our region variable is not as fine-grained as the district-level geographic variables in that work, our identification strategy is as close as possible given data limitations.

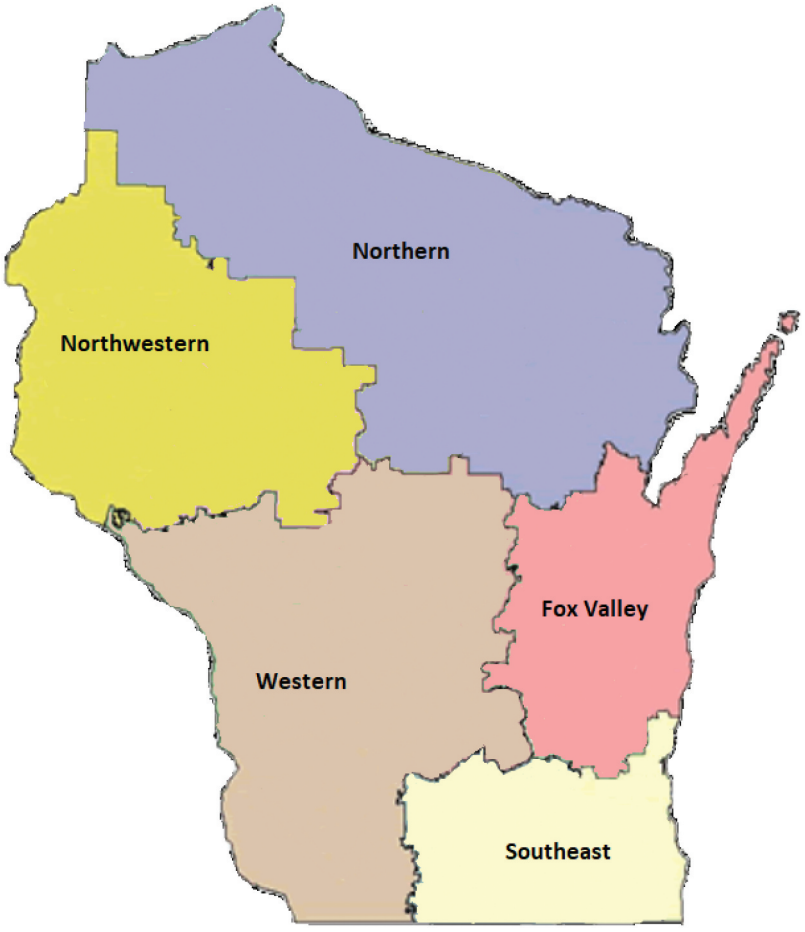

Figure 1. Regions used in matches. Source: created from Wisconsin Association of School Nurses (2025).

Propensity scores

Propensity scores were estimated using a logistic regression model for the likelihood of receiving the treatment as a function of the covariates listed above. The model took the following form. For each student *s*:

$$log\left(\frac{Pr(ChoiceExposure)}{1-Pr(ChoiceExposure)}\right) = \beta_0 + \beta_1 Low\_Income_s + \beta_2 African\ American_s + \beta_3 Hispanic_s + \beta_4 Male_s + \beta_5 English\ Learner_s + \beta_6 Grade4(2018)_s + \beta_7 Grade5(2018)_s + \beta_8 2018Score_s + \beta_9 Region_s$$

The generated propensity scores were used to create a matched control group with a similar likelihood of attending a school using a voucher.[2]

Propensity matching procedure

We employed propensity score matching to match treated and untreated students on their propensity to have been exposed to each level of school choice. Without adjustment, there are large differences between the treatment and control group. Table 3 depicts the means and standard deviations for the treatment and control groups for several key variables. Students in the WPCP are more likely to be low-income, African American, and Hispanic than other students in Wisconsin. The RPCP is a bit more of a mixed bag, with choice students being more likely to be Hispanic, but slightly less likely to be African American.

These differences result in a dataset with a large number of control observations with a low propensity. Figure 2 shows a kernel density plot of the probability of ever being exposed to private school choice in our

Table 3. Means and standard deviations, treatment and control groups.

	WPCP	Public	RPCP	Racine Public
African American	0.200 (0.4000)	0.040 (0.1952)	0.167 (0.3741)	0.217 (0.4128)
Hispanic	0.295 (0.4564)	0.108 (0.3100)	0.316 (0.4657)	0.289 (0.4537)
Low-Income	0.738 (0.4397)	0.384 (0.4864)	0.664 (0.4727)	0.637 (0.4810)

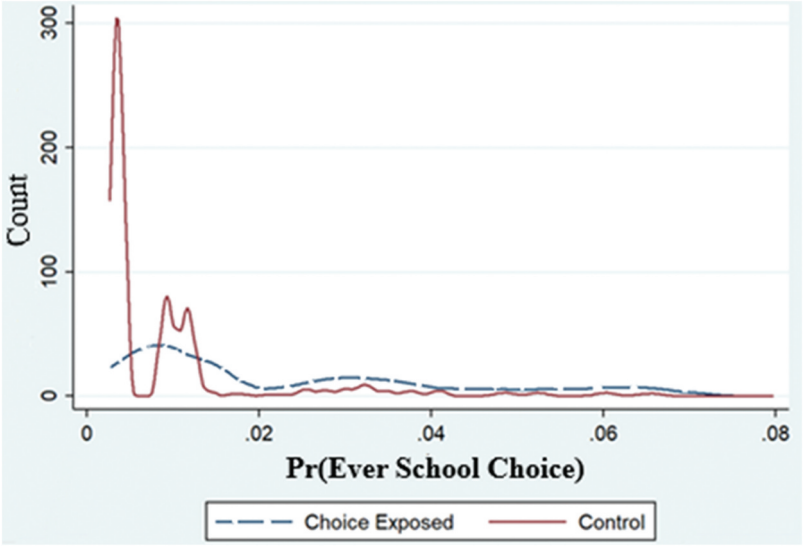

Figure 2. Kernel density plot: probability of any choice exposure (WPCP).

sample for those in the treatment and control group. There are a large number of control observations with a very low probability of choice exposure. This is accounted for primarily by the variables discussed above.

To make sure matched pairs were sufficiently similar, we applied a caliper, which restricts matches to students with sufficiently close propensity scores – here, a caliper width of 0.05.[3] This resulted in greatly improved balance for our testing. Each treated student was matched with at least one untreated student. Matching was performed with replacement, meaning that the same individual from the control group could be matched with different individuals from the treatment group. Matches ranged as high as 69 individuals.

After matching, we estimated the average treatment effect on the treated (ATT) as the difference in mean outcomes between treated units and their matched controls. Control variables were not included in this analysis. Significant, positive results would indicate that exposure to private school choice had a positive relationship to exam scores over time. A non-significant coefficient would indicate no relationship, while a negative coefficient would mean that exposure to private school choice was correlated with harm to students' test scores.

Results

Balance

Table 4 shows the results for key balance statistics from the model of any years of exposure to school choice in the WPCP. In particular, in the baseline sample, the regional variables were not well balanced. After matching, all the variables used to create the propensity score were well-balanced with standardized differences close to 0 and variance ratios close to 1 (Austin, 2009). These balance statistics are reported for each level of treatment in the appendix table A5.[4]

Achievement gains of exposure to school choice

The average change in achievement gain for school choice participants at each number of years of exposure for WPCP students is depicted in Table 5.[5] Our most important finding is that any exposure to school

Table 4. Pre- and post-match sample balance.

	Standardized Differences		Variance Ratio	
Variable	Raw	Matched	Raw	Matched
Low Income	.7636218	−.0099024	.8174428	1.010931
African Am.	.5085673	.0054393	4.198075	1.008253
Hispanic	.4786471	−.0047525	2.155326	.9957694
Male	−.1220383	.0130894	.9928841	1.002662
English Learner	.3447083	.0126585	2.28608	1.022956
2018 Score	−.3617914	.0002749	.8548328	1.082741
Southeast	.587931	.0162448	.9067728	.9877719
Western	−.2088891	−.0079844	.5899587	.9756344
Fox Valley	−.2434052	−.0148773	.6953836	.972466
Northern	−.1222881	−.0092383	.6669267	.9658619

choice is related to an increase of about 0.143 standard deviations in ELA scores. At the lowest level of exposure – 1 year of school choice – choice participation was not found to be related to an increase in test score growth. The same was true at 2 years. Significant differences begin to be observed at 3 years of exposure, with 4 years or more of exposure correlating with an increase of 0.356 standard deviations of growth, albeit at the lowest level of statistical significance ($p < .1$). We see a clear stepping up pattern as years of exposure increase. The variable measuring years of exposure to choice is positively correlated with larger increases in the change in the scale score from 2018 to 2022.

Table 6 details the results for Racine. Given the smaller sample size in the single district, it was difficult to achieve acceptable levels of covariate balance in the sub-buckets of years of exposure to school choice. Consequently, for Racine, we only report the relationship of Any Exposure to school choice in the main analysis. Year-by-year relationships are available in Appendix Table A4 along with balance tests by years of exposure in Table A5. Any exposure to school choice was related to an increase in scores of 0.572 standard deviations.

One plausible explanation for the larger coefficient sizes observed in Racine is that the program operates in a more concentrated and homogeneous local context than the statewide program, which likely reduces unobserved heterogeneity and amplifies measured correlations. Racine's choice program serves a smaller number of schools and students within a single district, where participating private schools may be more intentionally specialized, more tightly aligned to student needs, or operating in closer proximity to families, leading to stronger school–student matches. In contrast, the statewide program aggregates a wide variety of local markets, school models, and implementation conditions, which can dilute measured average association even when correlations are consistently positive. Additionally, baseline public school performance and competitive pressures likely differ in Racine, making marginal improvements from choice more detectable in standardized units. Finally, differences in program maturity and peer effects within a dense urban setting

Table 5. Change in ELA achievement gain by years of school choice (WPCP).

Years of School Choice	Scale Score Difference (In Standard Deviations)
4+ years	0.356
	(0.0577)***
3 years	0.150
	(0.0791)*
2 years	−0.040
	(0.07445)
1 year	−0.060
	(.0899)
Any Exposure	0.143
	(0.0359)***
N (4+ years)	93,144 (359 treated)
N (3 years)	92,982 (207 treated)
N (2 years)	92,960 (185 treated)
N (1 Year)	92,945 (170 treated)
N (Any Years)	93,696 (921 treated)

Standard errors in parentheses.
***$p < .01$, **$p < .05$, *$p < .1$.

Table 6. Change in ELA achievement gain, RPCP.

Years of School Choice	Scale Score Difference (In Standard Deviations)
Any Exposure	0.572
	(0.0663)***
N (Any Years)	2,545 (530 treated)

Standard errors in parentheses.
***$p < .01$, **$p < .05$, *$p < .1$.

like Racine may produce larger gains that are harder to sustain or observe when averaged across a diverse statewide landscape.

A potential concern with these findings is that the observed positive outcomes may reflect unmeasured characteristics of students who persist in private school choice, rather than the causal effect of the schooling itself. In other words, selection bias – particularly on unobserved traits such as motivation or family engagement – may account for the differences.

Prior research has addressed this issue using a variety of strategies. For example, Angrist et al. (2013) employ admission lottery outcomes as an instrumental variable for charter school attendance, leveraging random assignment to mitigate concerns about unobserved confounders. Abdulkadiroğlu et al. (2016) utilized the grandfathering-in of some students as an instrumental variable for years of attendance when randomization was not possible. While these approaches are methodologically rigorous, they are not feasible in the present context. Wisconsin's statewide choice program expanded gradually, limiting the prevalence of school-level lotteries, and our dataset does not include information on lottery outcomes or students grandfathered in as schools joined the choice programs.

Given these constraints, we adopt an alternative strategy to assess the role of unmeasured factors influencing persistence. Specifically, we implement a propensity score matching procedure within the subsample of school choice participants. This approach compares students with shorter exposure (1–2 years) to those with longer exposure (3–4 years), matching individuals based on their predicted likelihood of extended participation. The propensity scores are estimated using the same covariates included in our primary models in Table 7.

The estimated association for the WPCP sample remains both statistically significant and substantively meaningful. The corresponding estimate for the RPCP sample is directionally consistent but does not reach conventional levels of statistical significance ($p \approx 0.12$). This lack of precision is likely attributable to the substantially smaller matched sample size in the RPCP analysis relative to the main specifications.

By restricting the analysis to students who have participated in school choice, we create a more homogeneous comparison group with respect to unobserved characteristics that may influence persistence. Although this strategy cannot fully eliminate selection on unobservables – students with longer exposure may still differ systematically – the stability of the estimated effects is notable. In particular, the magnitude of the treatment effect remains comparable to estimates obtained when using non-participants as the reference group. This consistency suggests that bias due to unmeasured factors is likely limited and does not substantially drive the main results.

Another possibility is that students in the choice programs experienced greater stability in their education environment and that this explains their higher achievement gains more than sector differences. To address this, we re-estimated the matching model including an indicator for whether a student remained in the same school from 2018 through 2022 (Table A7) within the matching algorithm. This model reaches similar conclusions to our other models. The estimated association between choice exposure and ELA growth is positive and statistically significant in both the WPCP and RPCP, providing evidence that the relationship is not driven solely by school stability.

Table 7. Average ELA achievement gain among matched choice participants by years of exposure.

School Choice Exposure	Scale Score Difference (WPCP)	Scale Score Difference (RPCP)
3–4 Years	0.461	0.219
	(.08283)***	(0.1414)
Count 3–4 Years	359	334
Count 1–2 Years	355	104

Standard errors in parentheses.
***$p < .01$, **$p < .05$, *$p < .1$.

Discussion

Research on the participant effects of school choice has been mixed in recent years, with some research finding negative effects (Abdulkadiroğlu et al., 2018; Waddington & Berends, 2018), and others more positive (Egalite et al., 2020). Our findings fall decidedly more into the positive side of the ledger and are consistent with the previous generation of research in Milwaukee (e.g., Cowen et al., 2013; Wolf, 2012) and are broadly consistent with the most recent meta-analysis of school choice results from around the world (Shakeel et al., 2021).

We observe limited effects for students with only 1 or 2 years of exposure, but statistically significant and increasing gains associated with sustained participation over 3 or more years. This is consistent with work not only on private school choice (Wolf, 2012) but also other forms of school choice like charter schools (Angrist et al., 2013).

Finally, these findings should be interpreted in light of the unusual educational environment during the study period. The COVID-19 pandemic disrupted schooling across sectors, and differences in instructional continuity, reopening timelines, and learning environments may have contributed to the achievement patterns observed here. Reopening timelines varied in Wisconsin, and school districts that went back to school sooner have been found in research to have experienced smaller performance declines (Jack et al., 2023). Future research should examine whether the relationship between choice participation and achievement growth persists as students are followed through a more typical post-pandemic period.

Limitations

This article presents evidence about the potential benefits of school vouchers in Wisconsin, but there are limitations that ought to be discussed. While propensity score matching improves comparability between students who participate in school choice programs and those who do not, the approach relies on the assumption of selection on observables. That is, after conditioning on observed covariates, there are no unobserved factors that jointly influence both participation and academic outcomes. In the context of school choice, this assumption may be violated if unmeasured characteristics – such as parental motivation, student preferences, or access to information – affect both the decision to participate and achievement growth. Also, as noted above, a small share of the comparison group attended charter schools. Results excluding these students (Appendix Table A6) are consistent with our main findings, though we cannot rule out the possibility that comparisons partially reflect choice students in other sectors. With all this in view, the estimates presented here should be interpreted as associational rather than strictly causal.

It is also worth mentioning that our reported correlations in this article are over the course of 4 years of potential achievement gains. So the relationships found between school choice and standard deviations of growth should not be compared in magnitude with research that looks at gains from 1 year to the next.

While the time frame of our study may prove illuminating on the relationship of private school choice to achievement before and after the pandemic, it may limit the value of the findings in the broader context of sector performance. Specifically, private schools tended to reopen sooner than public schools (Fuchs-Schündeln et al., 2023), which likely impacted student achievement.

Conclusion

These results provide evidence that participation in Wisconsin's private school choice programs is positively associated with improved academic performance as measured by the Wisconsin Forward English Language Arts test. Using propensity score matching, we control for confounding variables, finding that exposure to private school choice is related to achievement gains in both the WPCP and RPCP. In the statewide program, it took at least 3 years of exposure to school choice for statistically significant gains to occur.

While direct comparisons should be made cautiously – given differences in student demographics, geographic context, and program maturity – the pattern of results aligns with evidence from Milwaukee suggesting that duration of participation is a key factor in realizing academic benefits. By examining Racine and the statewide program, this study extends prior work beyond a single urban district and demonstrates that similar dynamics may operate in more diverse educational settings.

While this design did not allow us to isolate specific mechanisms – such as instructional continuity, reopening timelines, or differential access to in-person learning – the results are consistent with emerging evidence that sector-level differences in schooling experiences may have widened during this period (Ponisciak & Dallavis, 2023). Future research could build on these findings by more directly examining how pandemic-era instructional practices and recovery strategies interact with school choice participation.

Policymakers should consider this evidence when evaluating whether to continue expanding private school choice options.

Notes

1. Note the summaries in Table 1 are the state of the programs in the 2022–2023 school year. Many of the numbers have changed in subsequent years.
2. A model limited to 5 matches per treated student was also conducted. The results looked very similar with significance after 3 and 4 years of exposure to school choice for the WPCP and significance for any exposure to school choice for the RPCP.
3. We also employ two alternative methods in the appendix. Appendix Table A1 uses traditional OLS regression and a continuous version of the treatment. Appendix Table A2 uses Inverse Probability of Treatment Weighting (IPTW) in a marginal structural model. All methods reach similar conclusions.
4. We also assess sensitivity to selection on unobservables using the method of Oster (2019). In the full model for any exposure to WPCP, the implied value of δ is −0.27, indicating that unobserved selection would need to operate in the opposite direction of observed selection to fully explain away the estimated effect. This suggests that the results are robust to plausible omitted variable bias. In our model for the RPCP, the implied value of δ is −6.93, meaning even stronger opposite unobserved selection would be needed. The values of δ for our other models of the WPCP are included in Appendix Table A3. The model for 1-year of WPCP exposure is particularly sensitive to selection bias ($\delta = 0.05$) and should be interpreted with a bit more caution.
5. Note that, for the 3-year model, one additional region variable had to be dropped for collinearity.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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