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# THE 123s OF SCHOOL CHOICE

What the research says about private school choice programs in America

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2025 EDITION



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## ABOUT EDCHOICE

EdChoice is a 501(c)(3) nonprofit, nonpartisan organization. Our mission is to advance educational freedom and choice for all as a pathway to successful lives and a stronger society. We are committed to understanding and pursuing a K–12 education ecosystem that empowers every family to choose the learning environment that fits their children’s needs best. EdChoice is the intellectual legacy of Milton and Rose D. Friedman, who founded the organization in 1996 as the Friedman Foundation for Educational Choice. The contents of this publication are intended to provide empirical information and should not be construed as lobbying for any position related to any legislation.

**WHAT'S NEW  
THIS YEAR?**

## NEW RESEARCH

Since releasing the first edition in 2019, we've updated *The 123s* every year with all the newly published studies that fall within our inclusion criteria (please see Appendix). Since the 2024 edition, three new studies have been published.

- Michael Griffith and Dion Burns of the Learning Policy Institute published a fiscal analysis of Arizona's ESA program. Using publicly available enrollment and cost data from the Arizona Department of Education, the researchers calculated the net fiscal effect of the 2022 expansion, which made all Arizona K–12 students eligible for the ESA program, on the 2022-23 school year. Due to data limitations, the researchers estimated the fiscal effect for the 2023-24 school year. This study found a net cost to the ESA expansion due to the 2022-23 switching rate and the estimated switching rate for 2023-24. One limitation of this study is the assumption that all ESA students who joined in 2022-23 or 2023-24 were not already participating in one of Arizona's tax credit scholarship programs, but data on students switching from these programs to the ESA are not available.
- Matthew Chingos, David Figlio, and Krzysztof Karbownik studied the effect of Ohio's EdChoice Scholarship Program on college enrollment and graduation, which was published by the Urban Institute. (EdChoice is not affiliated with Ohio's EdChoice Scholarship Program.) By matching public school students and voucher students, a quasi-experimental statistical technique, the

researchers found that participating in the EdChoice Scholarship Program had a significant positive effect on enrollment in and graduation from all college types. Additionally, the researchers found that the voucher had a positive effect on the college enrollment and graduation of students who remained in public schools. This is the first competitive effects analysis to look at the educational attainment of students who remain in public schools. Notably, the data included in this study only includes years in which the EdChoice Scholarship Program still had income limits.

- Martin F. Lueken published fiscal analyses for eight new programs, which are now included in the fiscal effects section. Two of these programs are ESAs: North Carolina's Personal Education Savings Accounts and Tennessee's Individualized Education Account Program. Three are vouchers: Arkansas's Succeed Scholarship Program for Students with Disabilities, Maryland's BOOST Program, and Wisconsin's Special Needs Scholarship Program. The final three are TCSs: Illinois's Invest in Kids Scholarship Program, Nevada's Educational Choice Scholarship Program, and South Dakota's Partners in Education Tax Credit Program. Lueken calculated short- and long-term fiscal savings for all these programs, except for Nevada's TCS, for which he found short term costs but long-term savings.

## NEW INCLUSIONS

Because there are so many studies on the effect of private school choice programs on participants' test scores, previous editions of *The 123s* only included gold standard, experimental research on this outcome. We have mentioned these programs in the analysis, but we have excluded them from the tables.

After much feedback and deliberation, we have decided to include quasi-experimental research on participants' test scores this year. We have made this change for two main reasons. First, public discourse has shown itself interested in more recent, quasi-experimental research when deliberating school choice policies. Second, it is now rare for a private school choice program to have lotteries randomly assigning a scarce number of vouchers, which renders gold standard research impossible. We wish to continue exploring and sharing what we learn about school choice policies with “next best” research techniques to further inform school choice conversations.

As a result, the participant test scores section is notably larger than in previous years despite no new studies being published in the last year. The tables note whether the study is experimental or not in the “RCT” columns (“randomized control trials;” see Appendix). The newly included studies have mixed results:

- In 2008, Jonathan A. Plucker, Matthew C. Makel, John A. Hansen, and Patricia A. Muller published a study of the Cleveland Scholarship Program in the peer-reviewed *Journal of School Choice* that specifically focused on high ability or “gifted” students. In this historically economically disadvantaged district, they found no discernable academic difference for high-performing students enrolling in the Cleveland Scholarship Program.
- In 2012, the School Choice Demonstration Project, authorized by the state of Wisconsin in 2005, published its final report on the Milwaukee Parental Choice Program. Led by John F. Witte, Deven Carlson, Joshua M. Cowen, Patrick J. Wolf, and David J. Fleming, the Project performed a matching study on the program. The researchers found that, “students in MPCP exhibited greater growth in both reading and math achievement across most grades and time periods, although not all of the differences are statistically significant.” Effects are more positive the longer a student participates in the program.
- In 2016, David Figlio and Krzysztof Karbownik performed a matching study on Ohio's EdChoice Scholarship Program. (EdChoice is not affiliated with this voucher program.) The researchers found voucher participation to negatively affect students' results on the state standardized test.

- In 2018, Joseph Waddington and Mark Berends studied Indiana’s Choice Scholarship Program. Using a matching study, the researchers concluded that participation in the voucher program had negative effects on participants’ math scores on the state standardized test and no discernable effect on reading scores. Math losses were concentrated in the first two years of program participation. Results appear to trend upward after four years in the program, but due to a smaller sample size, results for this period were not statistically significant.
- In 2020, Anna J. Egalite, D. T. Stallings, and Stephen R. Porter used matching techniques to study North Carolina’s Opportunity Scholarship Program. With the help of public and private school leaders across the state, the researchers developed comparable sample groups of low-income students to take the Iowa Test of Basic Skills, a nationally norm-referenced test. The researchers found voucher participation to have positive impacts on all three subject areas examined: math, reading, and language.

We determined these retroactive inclusions via snowballing. Specifically, we examined the systematic reviews and meta-analyses of participant test score effects (see “Other Reviews of Educational Choice Research”) and identified all included studies that met our newly expanded research criteria. We then searched the bibliographies of these studies to find any other studies that meet our inclusion criteria, and we repeated that process until we found no additional studies to add.

## NEW UPDATES

Sometimes research publications receive updates, either upon further review or to use additional, newly available data. These are citations in our bibliography that have required editing this year:

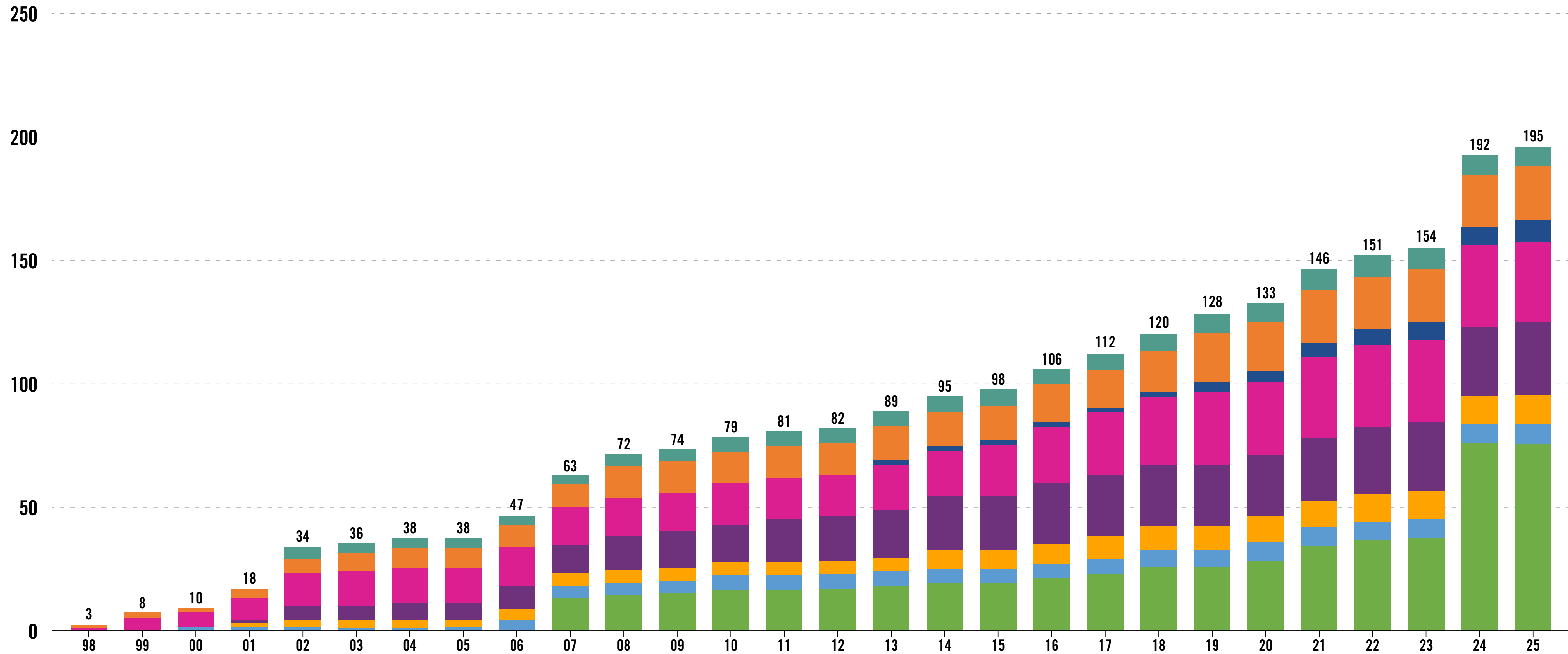
- Anna J. Egalite’s and Andrew D. Catt’s 2019 working paper on the competitive effects of Indiana’s Choice Scholarship Program passed peer review and has been published in AERA Open, a journal from the American Educational Research Association. The positive findings did not change.
- Martin F. Lueken’s 2021 fiscal analyses received updates, incorporating financial and switcher data through 2021-22. (The 2021 analyses relied on federal data that were available through 2017-18). As such, 40 studies in the fiscal effects section have received some kind of update. Compared to the 2021 analyses, Florida’s TCS’s net short term fiscal effect became negative, and Kansas’s TCS’s net short term fiscal effect became positive. All other short- and long-term effects remained the same. Lueken also conducted a second fiscal analysis of Arizona’s ESA using state data, which had more recent information and allowed analysis of the 2022-23 and 2023-24 fiscal years. This allowed an analysis of this ESA’s first two years being available for 100% of Arizona’s K–12 students. This analysis also found a net short-term cost and net long-term saving.

## HOW TO USE THE 123S

This is not a meta-analysis. We are not taking effect sizes and boiling them down to an average effect. The goal of The 123s is to present the increasingly large body of private school choice research in a clear and easy-to-read format and cite the relevant studies so that anyone who is interested in the individual results can easily find them and read in more detail.

The 123s is not meant to be a debate-ender. We live in a world where conversation is driven by short op-eds and even shorter tweets, with discussions about school choice research limited to a few studies, at most. In contrast, we present this comprehensive guide as a convenient way to see the relevant studies on a variety of topics. This resource should inform the debates about school choice. We take transparency and credibility seriously, and as such, we explain what we have included, what we have excluded, and why (see Appendix). Readers may disagree with our decisions, and we are always open to feedback about how we could make future editions of The 123s even more informative.

# CUMULATIVE NUMBER OF ANALYSES PUBLISHED BY OUTCOMES BY YEAR PUBLISHED



PARTICIPANT TEST SCORES
EDUCATIONAL ATTAINMENT
PARENT SATISFACTION
PUBLIC SCHOOL STUDENTS' ACADEMICS  
CIVIC VALUES AND PRACTICES
RACIAL INTEGRATION
FISCAL EFFECTS
SCHOOL SAFETY

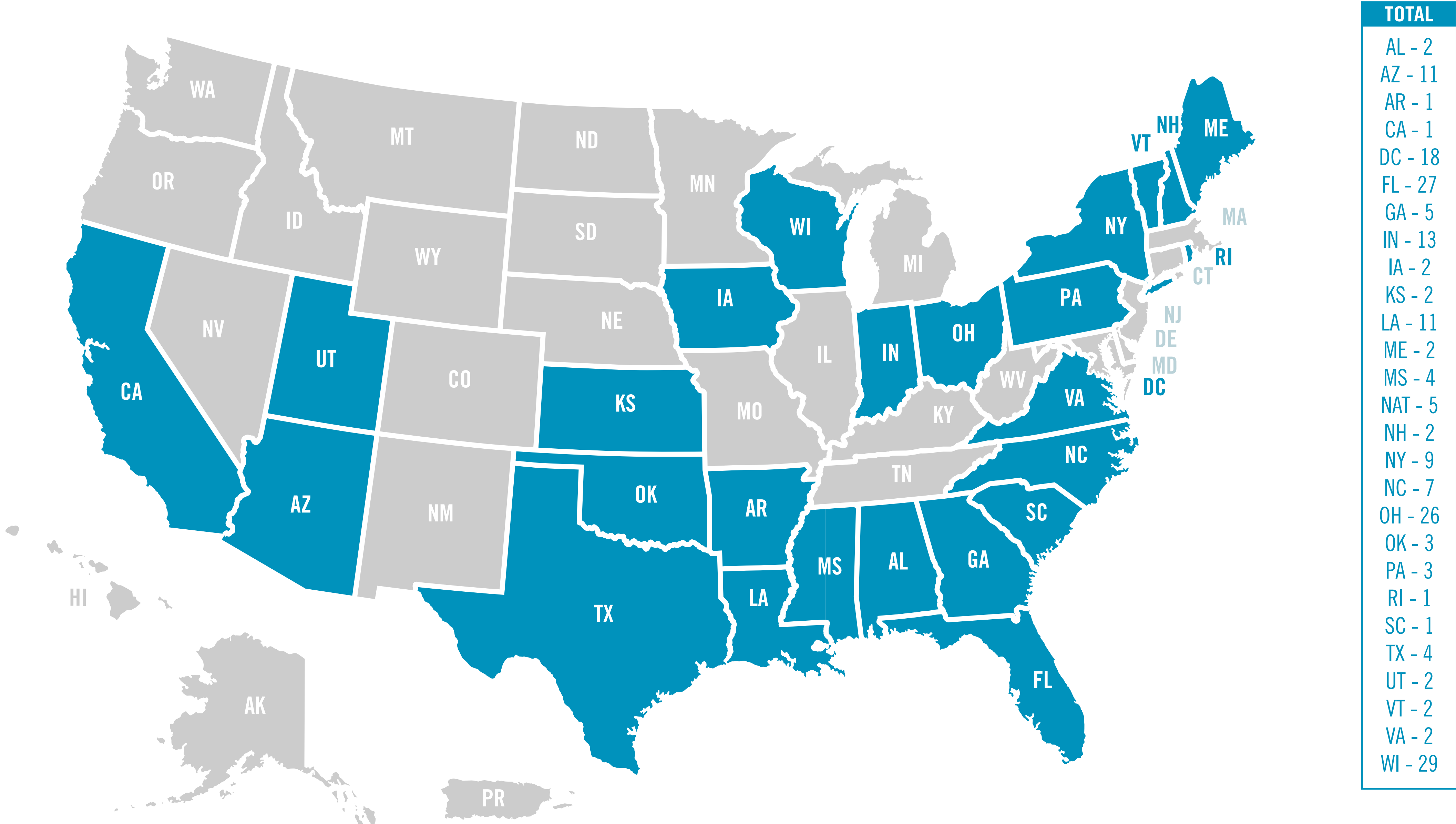
## OVERALL EFFECTS COUNTS FOR STUDIES OF PRIVATE SCHOOL CHOICE PROGRAMS

Outcome	Number of Studies	Positive Effects		No Visible Effects		Negative Effects	
<b>Program Participant Test Scores</b>	22	13	59%	5	23%	4	18%
<b>Educational Attainment</b>	8	6	75%	2	25%	0	0%
<b>Parent Satisfaction</b>	33	31	91%	1	3%	2	6%
<b>Public School Students' Academics</b>	30	27	90%	1	3%	2	7%
<b>Civic Values and Practices</b>	11	6	55%	5	45%	0	0%
<b>Racial/Ethnic Integration*</b>	8	7	88%	1	13%	0	0%
<b>Fiscal Effects</b>	83	77	87%	5	6%	7	8%
<b>School Safety</b>	8	8	100%	0	0%	0	0%
<b>TOTAL</b>	<b>203</b>	<b>175</b>	<b>83%</b>	<b>20</b>	<b>10%</b>	<b>15</b>	<b>7%</b>

*Notes:* If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect." The number of effects detected may differ from the number of studies included in the table because we classify some studies as having detected both positive and negative effects. Here we count as multiple "studies" any study that provides separate data analyses for different outcomes, such as an analysis of participant test scores and public students' academics.

\*One study employed multiple measures of racial integration and concluded that the effects of the program was overall neutral. We included this study in the "No Visible Effect" column.

# NUMBER OF STUDIES OF PRIVATE SCHOOL CHOICE PROGRAMS BY LOCATION



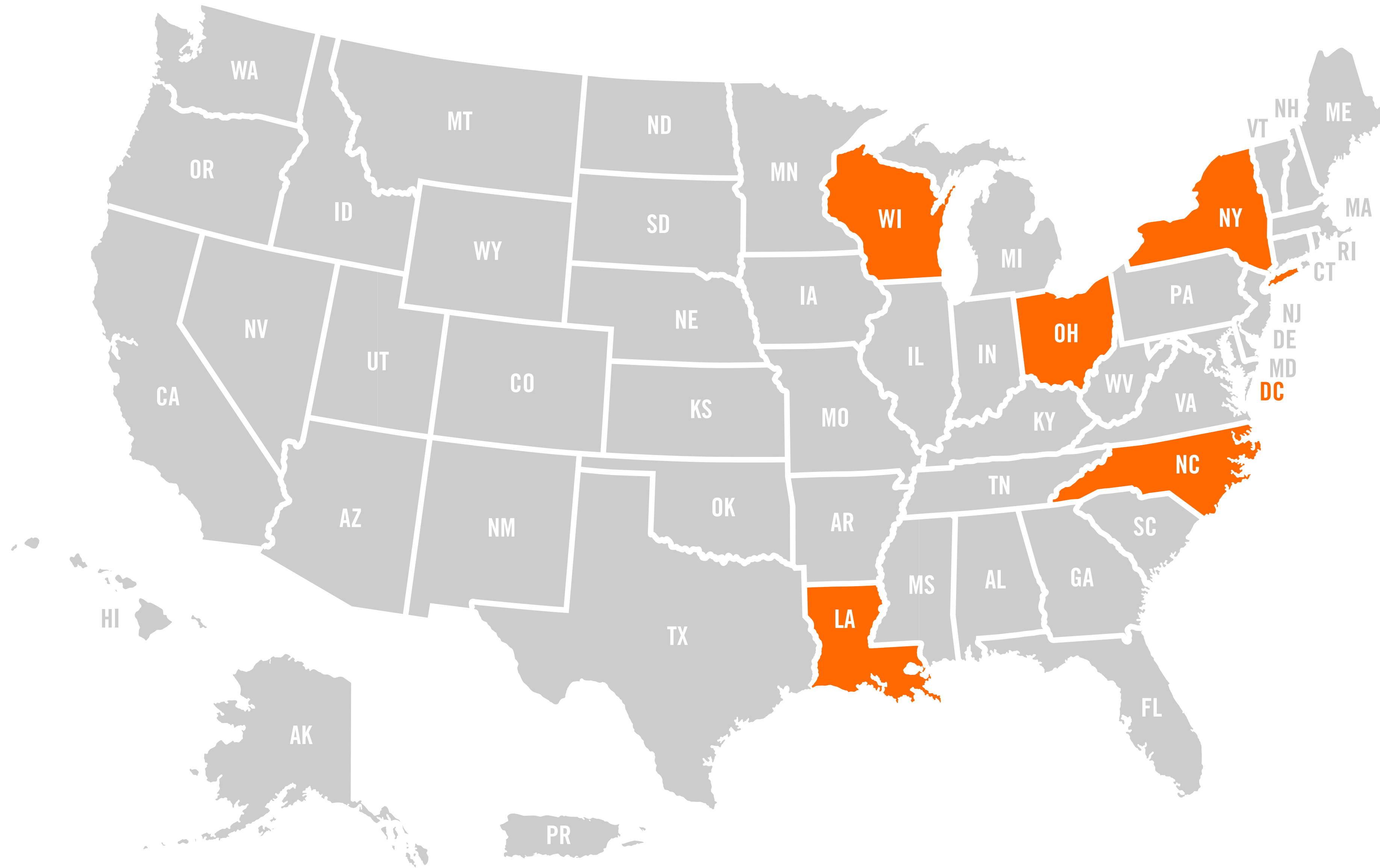
# RESEARCH OVERVIEWS FOR EIGHT SCHOOL CHOICE OUTCOMES

Do students get better test scores after getting private school vouchers?

Studies reviewed in this section reveal whether students who participate in a private school choice program perform better on given standardized tests than their public school counterparts.

Ten of these studies were RCTs (see Appendix 1) on privately funded programs dedicated to specific locales. Six studies looked at publicly funded programs restricted to a single city, and the rest researched statewide publicly funded programs.

# NUMBER OF STUDIES ON VOUCHER PROGRAM PARTICIPANT TEST SCORES BY LOCATION



# TEST SCORE OUTCOMES OF PARTICIPANTS FROM EMPIRICAL STUDIES

Author	Location	Program Type	Year	Program Name	Any Positive Effect		No Visible Effect		Any Negative Effect		RCT
					All students (full sample)	Some students (subsamples)	All students (full sample)	Some students (subsamples)	All students (full sample)	Some students (subsamples)	
Erickson, Mills and Wolf	Louisiana	V	2021	Louisiana Scholarship Program					●		●
Egalite, Stallings, and Porter	North Carolina	V	2020	Opportunity Scholarship Program	●	●					
Webber et al.	Washington, D.C.	V	2019	Opportunity Scholarship Program			●	●			●
Waddington and Berends	Indiana	V	2018	Choice Scholarship Program					●	●	
Abdulkadiroglu, Pathak, and Walters	Louisiana	V	2018	Louisiana Scholarship Program					●	●	●
Figlio and Karbownik	Ohio	V	2016	EdChoice Scholarship Program					●		
Wolf et al.	Washington, D.C.	V	2013	Opportunity Scholarship Program	●	●					●
Witte et al.	Milwaukee, WI	V	2012	Milwaukee Parental Choice Program	●	●					
Plucker et al.	Cleveland, OH	V	2008	Cleveland Scholarship Program				●			
Lamarche	Milwaukee, WI	V	2008	Milwaukee Parental Choice Program		●					●
Greene, Peterson, and Du	Milwaukee, WI	V	1999	Milwaukee Parental Choice Program	●						●
Rouse	Milwaukee, WI	V	1998	Milwaukee Parental Choice Program	●	●					●
Bitler et. al.	New York, NY	P	2015				●	●			●
Jin, Barnard, and Rubin	New York, NY	P	2010			●					●
Cowen	Charlotte, NC	P	2008		●						●
Bettinger and Slonim	Toledo, OH	P	2006				●				●
Krueger and Zhu	New York, NY	P	2004				●	●			●
Barnard et al.	New York, NY	P	2003			●	●				●
Howell et al.	Washington, D.C.	P	2002		●	●					●
Howell et al.	New York, NY	P	2002		●	●					●
Howell et al.	Dayton, OH	P	2002			●	●				●
Greene	Charlotte, NC	P	2001		●						●

V=Voucher; P=Private scholarship

Notes: A study by Howell, Wolf, Campbell, and Peterson (2002) included three distinct analyses of three different voucher programs. We report results from each analysis separately. If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect." The number of effects detected may differ from the number of studies included in the table because we classify one study as having detected both positive and negative effects.

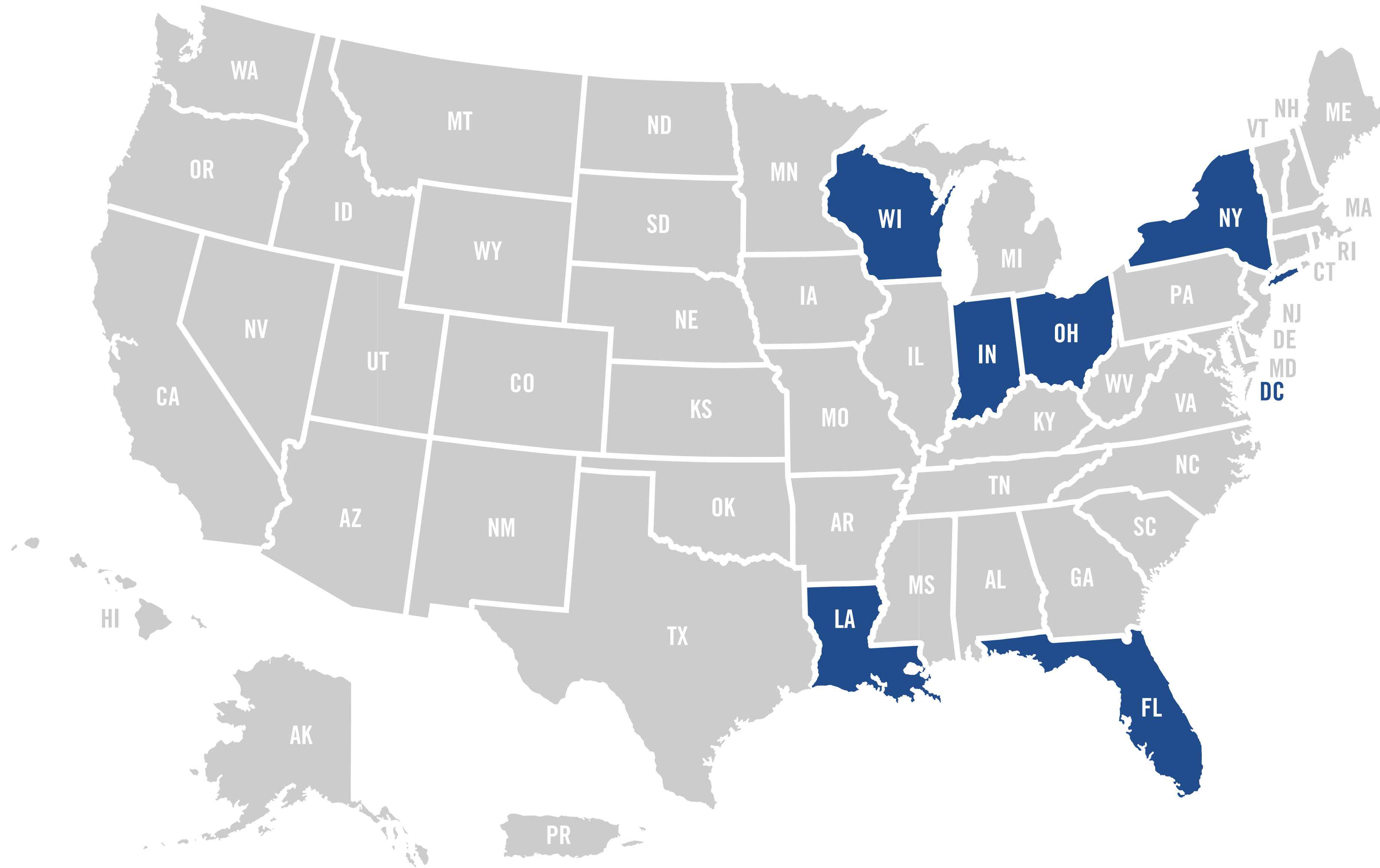
## PROGRAM PARTICIPANT EDUCATIONAL ATTAINMENT

8 STUDIES | 6 POSITIVE EFFECT | 2 NO VISIBLE EFFECT | 0 NEGATIVE EFFECT

This section reviews studies that examined whether students who participated in a private school choice program were more likely to graduate from high school, more likely to enroll in college and/or more likely to persist in college than students who did not use scholarships.

Parents, policymakers, and other stakeholders ultimately care about the long-run effects of education programs. Some research suggests a relationship between better educational attainment and real-life outcomes, such as employment outlook, earnings, health, longevity and likelihood to commit crime. Even when studies look at test scores, they usually do so on the grounds that they provide reliable proxies for outcomes later in life.

# NUMBER OF STUDIES ON PROGRAM PARTICIPANT ATTAINMENT EFFECTS BY LOCATION



TOTAL
DC - 2
FL - 1
IN - 1
OH - 1
LA - 1
NY - 1
WI - 1

# ATTAINMENT OUTCOMES OF PARTICIPANTS FROM EMPIRICAL STUDIES

Author	Location	Program Type	Year	Program Name	Any Positive Effect		No Visible Effect		Any Negative Effect		RCT
					All students <i>(full sample)</i>	Some students <i>(subsamples)</i>	All students <i>(full sample)</i>	Some students <i>(subsamples)</i>	All students <i>(full sample)</i>	Some students <i>(subsamples)</i>	
Chingos, Figlio, and Karbownik	Ohio	V	2025	EdChoice Scholarship Program	●						
Austin and Pardo	Indiana	v	2021	Choice Scholarship Program	●						
Erickson, Mills, and Wolf	Louisiana	V	2021	Louisiana Scholarship Program			●	●			●
Chingos and Kisida	Washington, D.C.	V	2023	Opportunity Scholarship Program			●	●			●
Chingos et al.	Milwaukee, WI	V	2019	Milwaukee Parental Choice Program	●						
Wolf et al.	Washington, D.C.	V	2013	Opportunity Scholarship Program	●	●					●
Chingos et al.	Florida	TCS	2019	Florida Tax Credit Scholarship Program	●	●					
Cheng and Peterson*	New York, NY	P	2020			●	●				●

**V=Voucher; TCS=Tax-credit scholarship; P=Private scholarship**

\*The sample and methods used in this study are the same as those used in Matthew M. Chingos and Paul E. Peterson (2015). Experimentally Estimated Impacts of School Vouchers on College Enrollment and Degree Attainment. Journal of Public Economics, 122, pp. 1–12. <https://dx.doi.org/10.1016/j.jpubeco.2014.11.013>. Two main differences are framing across levels of disadvantage and more recent data added to the analysis.

*Notes:* If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as “no visible effect.” Two studies, on the Florida Tax Credit Scholarship Program and Milwaukee Parental Choice Program, used matching methods while all other analyses were based on random assignment.

This section considers the effect of private school choice programs on parents' satisfaction with their chosen schools. We examine this body of research because parents are in the best position to understand what educational environment best fits their children. There does not exist a single way or type of school that can serve all children well. Considering parent satisfaction can help policymakers gauge the value of choice policies.

Most studies focus on overall school satisfaction, while some narrow in on satisfaction with specific aspects of the chosen school. When possible, study authors draw direct comparisons to families' former public schools. Studies that ask parents from several schooling sector about their satisfaction can compare satisfaction across sector.



# PARENT SATISFACTION IMPACTS FROM PRIVATE EDUCATIONAL CHOICE PROGRAMS

Author	Location	Program Type	Year	Program Name	Any Positive Effect	No Visible Effect	Any Negative Effect	RCT
Varga et al.	Florida	ESA	2021	Family Empowerment Scholarship Program	●			
Catt and Cheng	Arizona	ESA	2019	Empowerment Scholarship Accounts	●		●	
Kittredge	Mississippi	ESA	2016	Equal Opportunity for Students with Special Needs Program	●			
Butcher and Bedrick	Arizona	ESA	2013	Empowerment Scholarship Accounts	●			
Varga et al.	Florida	V	2021	John M. McKay Scholarships for Students with Disabilities Program	●			
Legislative Audit Bureau	Wisconsin	V	2018	Special Needs Scholarship Program	●			
Catt and Rhinesmith	Indiana	V	2017	Choice Scholarship Program	●			
Egalite, Gray, and Stallings	North Carolina	V	2017	Opportunity Scholarships	●			
Black	Florida	V	2015	John M. McKay Scholarships for Students with Disabilities Program		●		
Kisida and Wolf	Washington, D.C.	V	2015	Opportunity Scholarship Program	●			●
Witte et al.	Milwaukee, WI	V	2008	Milwaukee Parental Choice Program	●			
Weidner and Herrington	Florida	V	2006	John M. McKay Scholarships for Students with Disabilities Program	●			
Greene and Forster	Florida	V	2003	John M. McKay Scholarships for Students with Disabilities Program	●			
Witte	Milwaukee, WI	V	2000	Milwaukee Parental Choice Program	●			●
Metcalfe	Cleveland, OH	V	1999	Cleveland Scholarship Program	●			
Peterson, Howell, and Greene	Cleveland, OH	V	1999	Cleveland Scholarship Program	●			
Greene, Howell, and Peterson	Cleveland, OH	V	1998	Cleveland Scholarship Program	●			
Catt and Rhinesmith	Indiana	V/TCS*	2016	Choice Scholarship Program/School Scholarship Tax Credit	●			
DiPerna	Indiana	V/TCS†	2014	Choice Scholarship Program/School Scholarship Tax Credit	●			
Catt and Kristof	Kansas	TCS	2022	Tax Credit for Low Income Students Program	●			
Catt and Cheng	Arizona	TCS	2019	All four tax-credit scholarship programs**			●	
Department of Revenue Administration	New Hampshire	TCS	2018	Education Tax Credit Program	●			
Catt and Rhinesmith	Indiana	TCS	2017	School Scholarship Tax Credit	●			
Kelly and Scafidi	Georgia	TCS	2013	Qualified Education Expense Tax Credit	●			
Howell and Peterson	Dayton, OH	P	2002		●			●
Howell and Peterson	New York, NY	P	2002		●			●
Howell and Peterson	National	P	2002		●			●
Howell and Peterson	Washington, D.C.	P	2002		●			●
Peterson and Campbell	National	P	2001		●			●
Greene	Charlotte, NC	P	2001		●			●
Peterson, Campbell, and West	San Francisco, CA	P	2001		●			
Peterson, Myers, and Howell	San Antonio, TX	P	1999		●			
Weinschrott and Kilgore	Indianapolis, IN	P	1998		●			

ESA=Education Savings Account; V=Voucher; TCS=Tax-Credit Scholarship; P=Private Scholarship

\*The report combined voucher and tax-credit scholarship parents into "Choice Parents," although anyone could calculate voucher and tax-credit scholarship results based on data tables in the report appendices.

\*\* Results could not be broken out by program and reflect responses by parents with children attending private schools via any of Arizona's four tax-credit scholarship programs.

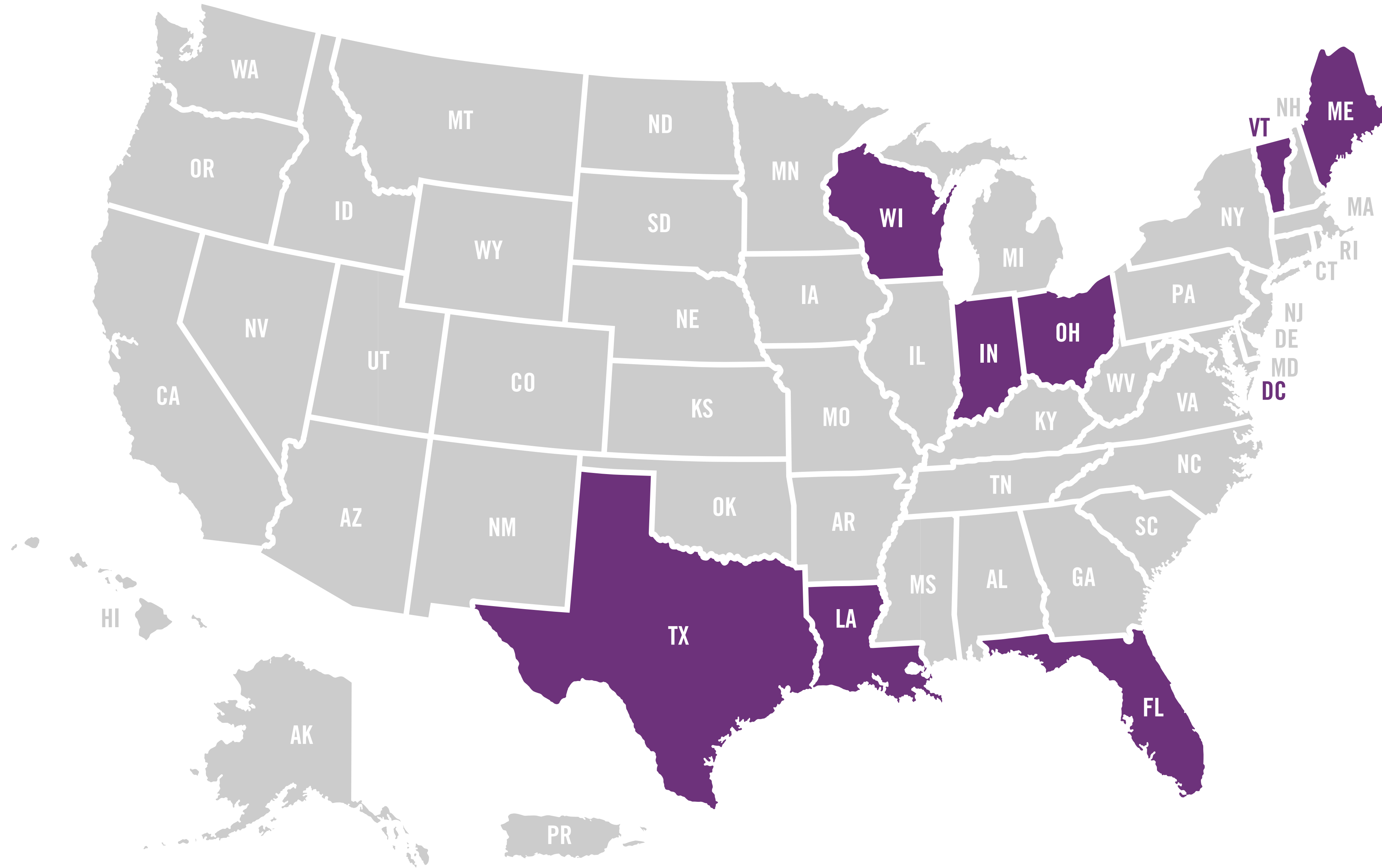
†The report combined voucher and tax-credit scholarship parents into "Choice Parents" for all information made publicly available.

Notes: If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect."

These studies examine the competitive effects of private school choice programs on public school students. They study whether a private school choice program affects the test scores of students who remain in public schools.

Many people want to know if these programs leave students who remain in public schools worse off. School choice programs might divert resources or the most capable students away from public schools, they reason, harming the children who are “left behind.”

# NUMBER OF STUDIES ON PUBLIC SCHOOL TEST SCORES BY LOCATION



# ACADEMIC OUTCOMES OF PUBLIC SCHOOLS FROM EMPIRICAL STUDIES

Author	Location	Program Type	Year	Program Name	Any Positive Effect	No Visible Effect	Any Negative Effect
Chingos, Figlio, and Karbownik	Ohio	V	2025	Educational Choice Scholarship Program	●		
Egalite and Catt	Indiana	V	2025	Choice Scholarship Program	●		
Lavertu and Gregg	Ohio	V	2022	Educational Choice Scholarship Program	●		
Canbolat	Indiana	V	2021	Choice Scholarship Program			●
Egalite and Mills	Louisiana	V	2021	Louisiana Scholarship Program	●		
Figlio and Karbownik	Ohio	V	2016	Educational Choice Scholarship Program	●		
Bowen and Trivitt	Florida	V	2014	Opportunity Scholarship Program*			●
Chakrabarti	Florida	V	2013	Opportunity Scholarship Program*	●		
Carr	Ohio	V	2011	Educational Choice Scholarship Program	●		
Winters and Greene	Florida	V	2011	John M. McKay Scholarships for Students with Disabilities Program	●		
Mader	Milwaukee, WI	V	2010	Milwaukee Parental Choice Program	●		
Greene and Marsh	Milwaukee, WI	V	2009	Milwaukee Parental Choice Program	●		
Chakrabarti	Milwaukee, WI	V	2008	Milwaukee Parental Choice Program	●		
Forster	Ohio	V	2008	Educational Choice Scholarship Program	●		
Forster	Florida	V	2008	Opportunity Scholarship Program*	●		
Carnoy et al.	Milwaukee, WI	V	2007	Milwaukee Parental Choice Program	●		
Greene and Winters	Washington, D.C.	V	2007	Opportunity Scholarship Program		●	
Figlio and Rouse	Florida	V	2006	Opportunity Scholarship Program*	●		
West and Peterson	Florida	V	2006	Opportunity Scholarship Program*	●		
Greene and Winters	Florida	V	2004	Opportunity Scholarship Program*	●		
Greene and Forster	Milwaukee, WI	V	2002	Milwaukee Parental Choice Program	●		
Hammons	Maine	V	2002	Town Tuitioning Program	●		
Hammons	Vermont	V	2002	Town Tuitioning Program	●		
Hoxby	Milwaukee, WI	V	2002	Milwaukee Parental Choice Program	●		
Greene	Florida	V	2001	Opportunity Scholarship Program*	●		
Figlio et al.	Florida	TCS	2023	Florida Tax Credit Scholarship Program	●		
Figlio and Hart	Florida	TCS	2014	Florida Tax Credit Scholarship Program	●		
Rouse et al.	Florida	TCS	2013	Florida Tax Credit Scholarship Program	●		
Gray, Merrifield, and Adzima	San Antonio, TX	P	2016		●		
Greene and Forster	San Antonio, TX	P	2002		●		

V=Voucher; TCS=Tax-credit scholarship; P=Private scholarship

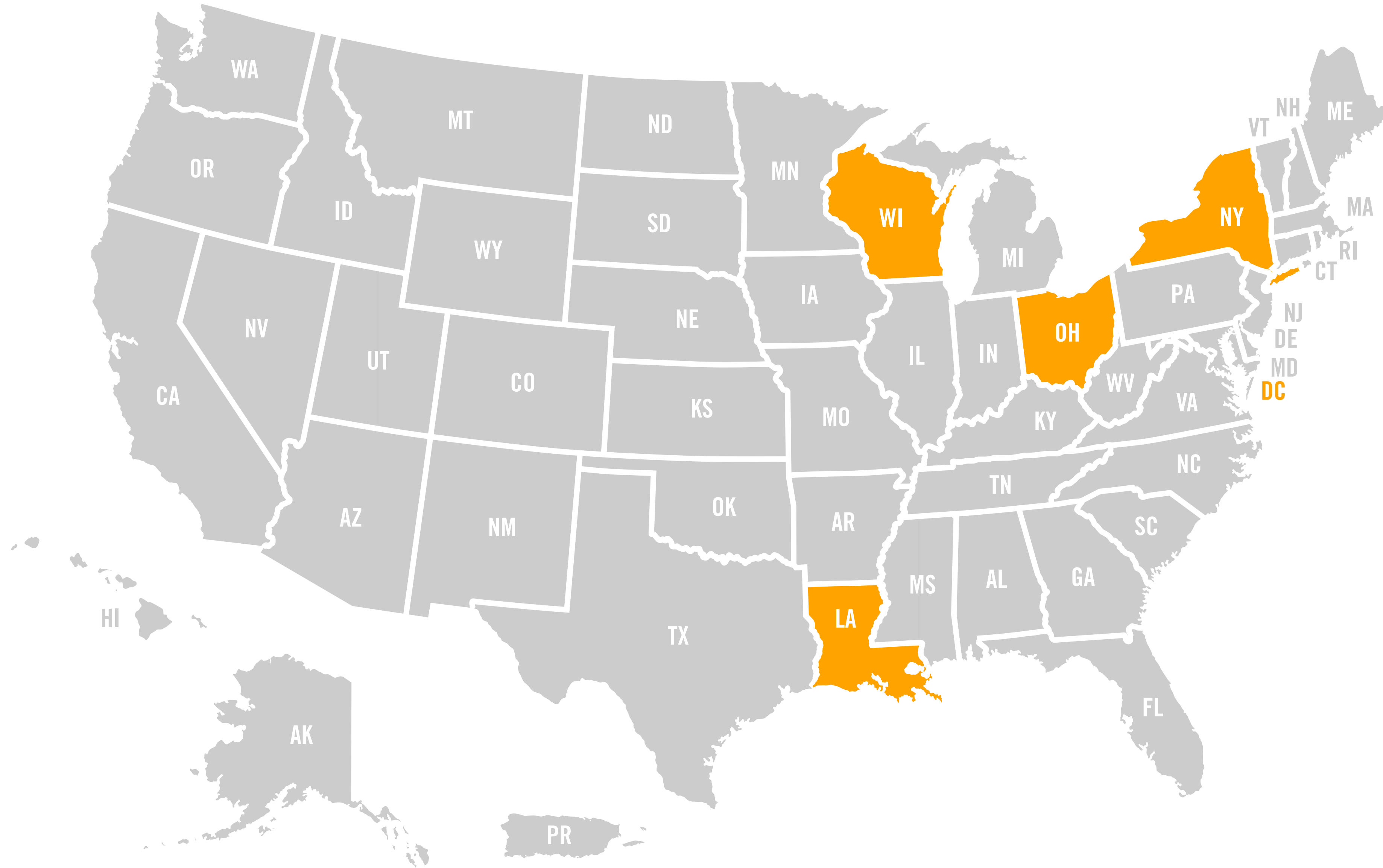
\*The Florida Supreme Court declared that the private school voucher component of the program was unconstitutional in January 2006.

Notes: If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect."

Instilling common democratic and civic values is a core purpose of and argument for public funding of K–12 education. Historically elementary and secondary schools have had an important role leveling the playing field for students when it comes to socialization around shared civic values and activities. This function may become more important as the United States is increasingly diverse with each oncoming generation of Americans.

The studies examined in this section analyze whether enrolling in a private school choice program has an effect on students' civic values or how students exhibit civic practices. Such values and practices include: tolerance for the rights of others, civic knowledge, civic participation, volunteerism, social capital, civic skills, voter registration, voter turnout, and patriotism. Studies that assess criminal activity tendencies are also considered for this section.

# NUMBER OF STUDIES ON CIVIC VALUES AND PRACTICES BY LOCATION



## CIVIC VALUES AND PRACTICES FROM EMPIRICAL STUDIES

Author	Location	Program Type	Year	Program Name	Any Positive Effect	No Visible Effect	Any Negative Effect	RCT
DeAngelis and Wolf	Milwaukee, WI	V	2020	Milwaukee Parental Choice Program	●			
DeAngelis and Wolf	Milwaukee, WI	V	2019	Milwaukee Parental Choice Program		●		
Mills et al.	Louisiana	V	2016	Louisiana Scholarship Program		●		●
Fleming, Mitchell, and McNally	Milwaukee, WI	V	2014	Milwaukee Parental Choice Program	●			
Fleming	Milwaukee, WI	V	2014	Milwaukee Parental Choice Program	●			
Carlson, Chingos, and Campbell	New York, NY	P	2017			●		●
Bettinger and Slonim	Toledo, OH	P	2006		●			●
Howell and Peterson	Washington, D.C.	P	2002			●		●
Campbell	National	P	2002		●			●
Peterson and Campbell	Nationwide	P	2001			●		●
Wolf, Peterson, and West	Washington, D.C.	P	2001		●			●

**V=Voucher; P=Private scholarship**

*Notes:* This table shows all empirical studies using all methods. If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect."

Measuring school choice's impact on integration is both challenging and very important. Research in this area is essential because of the longstanding history and concern about segregation in America's public and private schools.

It is important to keep in mind that the public education system in the U.S. has led to much sorting across schools by family income level.<sup>1</sup> Furthermore, racial sorting in public schools has lagged improvements in neighborhood integration or even increased over the past few decades.<sup>2</sup> Given the strong link between neighborhoods and residential assignment, it is puzzling to see neighborhoods become more integrated while public schools have become more segregated. Is school choice to blame? That question is worth investigating.

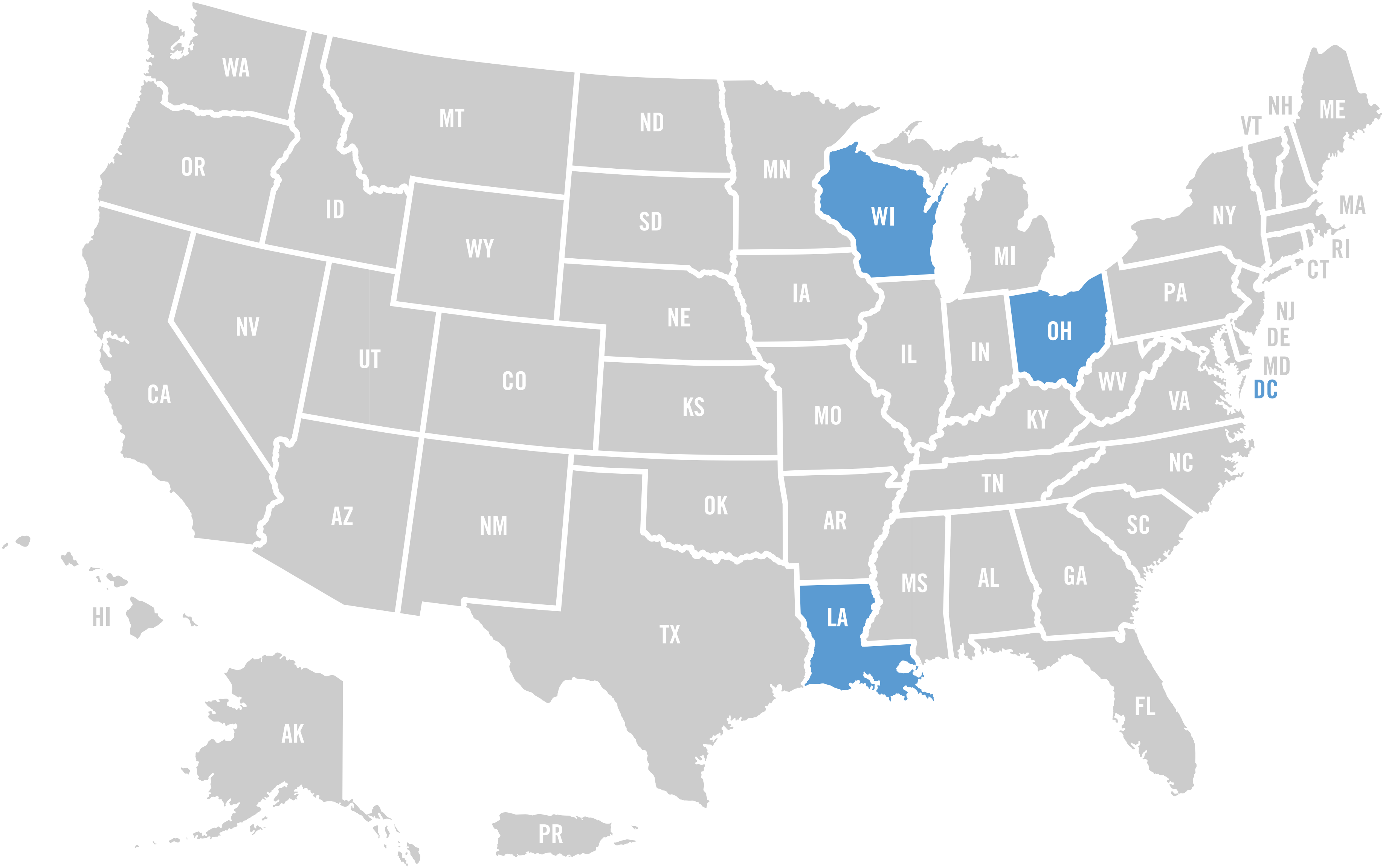
A number of issues and questions must be tackled when measuring the impact of school choice programs on integration.

- **What is the standard for determining if a school becomes more or less integrated?** Is a school integrated when it matches the demographic characteristics of its neighborhood? The city? The county? The state? This matters because picking different comparison groups can yield wildly different findings.<sup>3</sup>
- **Which perspective should be used to determine if a choice program increases or decreases segregation?** When a student moves from one school to another, he or she affects the racial composition of both the former school and the new school. Is it a good thing when a student can attend a more integrated school? What about the children left behind? Similarly, if the student goes to a more segregated school, that movement could make their old school more integrated. What is a "positive" finding in this scenario?
- **What unit of analysis is appropriate?** Researchers can usually look only at school-level segregation. But what happens once a student walks through the school doors? Are classrooms integrated, or are children of different races tracked into different courses? Is the lunchroom? Are extra-curricular activities? Conceivably a putatively "integrated" school could still be segregated in practice. Data alone simply can't sufficiently answer these research questions.

In this section, we consider studies that examine the effect of school choice programs on racial and ethnic diversity in public and private schools. Since the late 1990s researchers have analyzed the impacts of school voucher programs.

Because researchers' methods vary, we advise some caution and encourage further exploration of the individual studies. We have tried to be as transparent as possible in explaining how the researchers chose to cope with the above questions. That said, research conducted to date shows that school choice programs promote integration.

# NUMBER OF STUDIES ON RACIAL/ETHNIC INTEGRATION BY LOCATION



TOTAL
DC - 1
LA - 1
OH - 3
WI - 3

# RACIAL INTEGRATION FROM EMPIRICAL STUDIES

Author	Location	Program Type	Year	Program Name	Any Positive Effect	No Visible Effect	Any Negative Effect
Lavertu and Gregg	Ohio	V	2022	EdChoice Scholarship Program	●		
Egalite, Mills, and Wolf	Louisiana	V	2017	Louisiana Scholarship Program	●		
Greene, Mills, and Buck	Milwaukee, WI	V	2010	Milwaukee Parental Choice Program		●	
Greene and Winters	Washington, D.C.	V	2007	Opportunity Scholarship Program	●		
Forster	Milwaukee, WI	V	2006	Milwaukee Parental Choice Program	●		
Forster	Cleveland, OH	V	2006	Cleveland Scholarship Program	●		
Fuller and Mitchell	Milwaukee, WI	V	2000	Milwaukee Parental Choice Program	●		
Greene	Cleveland, OH	V	1999	Cleveland Scholarship Program	●		

V=Voucher

Notes: This table shows all empirical studies using all methods; the total effect on segregation in all schools is referenced. Table excludes studies that do not adequately define segregation or fail to make appropriate comparisons. For example, comparing the racial makeup of a given school to the makeup of a larger administrative unit such as a school district or municipality can be misleading and fails to directly measure the effect of introducing a private school choice program.

These studies examine the fiscal effect that private school choice programs have on taxpayers, state budgets and public school districts. Not surprisingly, studies of school choice address fiscal effects more than any other topic.

One of the most common criticisms levied against school choice is that these programs “drain” or “siphon” resources from public schools. A national survey found that 29% of respondents who opposed to ESAs cited concerns about diverting funding away from public schools as the most important reason for their opposition.<sup>4</sup> In light of such concerns, policymakers often want to better understand the fiscal effects of these programs.

The fiscal question is a complicated one. School funding comes from several different sources, including federal, state, and local governments. School funding formulas are complex and often hard to understand. The distribution of the fiscal effects among different taxpayers and public school districts can be highly uneven – programs may generate very different fiscal effects for state taxpayers compared to the fiscal effects that school districts experience.

It is common to wonder whether school choice programs will hurt the revenues of public schools. Less often considered, however, are the cost savings that accrue when students leave the public K–12 system. When students leave a public school by using vouchers, the school gets less funding. But it also has fewer students to educate, and thus, lower costs.



# FISCAL EFFECTS ON TAXPAYERS AND PUBLIC SCHOOLS FROM EMPIRICAL STUDIES

Author	Location	Program Type	Year	Program Name	Any Positive Effect	No Visible Effect	Any Negative Effect
Griffith and Burns	Arizona	ESA	2024	Empowerment Scholarship Accounts			●
Lueken	Arizona	ESA	2024	Empowerment Scholarship Accounts	●		●
Lueken	Florida	ESA	2024	Family Empowerment Scholarship Program	●		
Lueken	Mississippi	ESA	2024	Equal Opportunity for Students with Special Needs Program	●		
Lueken	North Carolina	ESA	2024	Personal Education Savings Accounts	●		
Lueken	Tennessee	ESA	2024	Individualized Education Account Program	●		
PEER Mississippi#	Mississippi	ESA	2020	Equal Opportunity for Students with Special Needs Program			●
Lueken	Arkansas	V	2024	Succeed Scholarship Program for Students with Disabilities	●		
Lueken	Washington, D.C.	V	2024	Opportunity Scholarship Program	●		
Lueken	Florida	V	2024	John M. McKay Scholarships for Students with Disabilities Program	●		
Lueken	Georgia	V	2024	Georgia Special Needs Scholarship Program	●		
Lueken	Indiana	V	2024	Choice Scholarship Program	●		
Lueken	Louisiana	V	2024	Louisiana Scholarship Program	●		
Lueken	Louisiana	V	2024	School Choice Program for Certain Students with Exceptionalities	●		
Lueken	Maryland	V	2024	Broadening Options and Opportunities for Students Today (BOOST) Program	●		
Lueken	Mississippi	V	2024	Mississippi Dyslexia Therapy Scholarship for Students with Dyslexia Program	●		
Lueken	North Carolina	V	2024	Special Education Scholarship Grants for Children with Disabilities	●		
Lueken	North Carolina	V	2024	Opportunity Scholarships	●		
Lueken	Cleveland, OH	V	2024	Cleveland Scholarship Program	●		
Lueken	Ohio	V	2024	Autism Scholarship Program	●		
Lueken	Ohio	V	2024	Educational Choice Scholarship Program	●		
Lueken	Ohio	V	2024	Jon Peterson Special Needs Scholarship Program	●		
Lueken	Ohio	V	2024	Income-Based Scholarship Program	●		
Lueken	Oklahoma	V	2024	Lindsey Nicole Henry Scholarships for Students with Disabilities	●		
Lueken	Utah	V	2024	Carson Smith Special Needs Scholarship Program	●		
Lueken	Milwaukee, WI	V	2024	Milwaukee Parental Choice Program	●		
Lueken	Racine, WI	V	2024	Parental Private School Choice Program (Racine)	●		
Lueken	Wisconsin	V	2024	Special Needs Scholarship Program	●		
Lueken	Wisconsin	V	2024	Parental Choice Program (Statewide)	●		●
Lavertu and Gregg	Ohio	V	2022	Educational Choice Scholarship Program		●	
Faulk and Hicks	Indiana	V	2021	Choice Scholarship Program	●		
DeAngelis	Wisconsin	V	2020	four voucher programs	●		
Trivitt and DeAngelis	Louisiana	V	2020	Louisiana Scholarship Program	●		

ESA=Education Savings Account; V=Voucher

# Joint Legislative Committee on Performance Evaluation and Expenditure Review

Notes: This table shows all empirical studies using all methods; the total fiscal effect of school choice programs is referenced. Table excludes any analyses that fail to make a reasonable attempt to account for both sides of the ledger, i.e. both costs and savings from school choice programs. If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect." Lueken (2021) employs the same methods as: Martin F. Lueken (2018). Fiscal Effects of School Vouchers: Examining the Savings and Costs of America's Private School Voucher Programs. Retrieved from EdChoice website: <https://www.edchoice.org/wp-content/uploads/2018/09/Fiscal-Effects-of-School-Vouchers-by-Martin-Lueken.pdf>

## FISCAL EFFECTS ON TAXPAYERS AND PUBLIC SCHOOLS FROM EMPIRICAL STUDIES (CONTINUED)

Author	Location	Program Type	Year	Program Name	Any Positive Effect	No Visible Effect	Any Negative Effect
Trivitt and DeAngelis	Arkansas	V	2018	Succeed Scholarship Program	●		
Wisconsin LAB*	Wisconsin	V	2018	Special Needs Scholarship Program		●	
DeAngelis and Trivitt	Louisiana	V	2016	Louisiana Scholarship Program	●		
Spalding	Florida	V	2014	Opportunity Scholarship Program†	●		
Wolf and McShane	Washington, D.C.	V	2013	Opportunity Scholarship Program	●		
Costrell	Milwaukee, WI	V	2010	Milwaukee Parental Choice Program	●		
Aud	Vermont	V	2007	Town Tuitioning Program		●	
Aud	Maine	V	2007	Town Tuitioning Program		●	
Aud	Florida	V	2007	John M. McKay Scholarships for Students with Disabilities Program	●		
Aud	Florida	V	2007	Opportunity Scholarship Program†	●		
Aud	Washington, D.C.	V	2007	Opportunity Scholarship Program	●		
Aud	Cleveland, OH	V	2007	Cleveland Scholarship Program	●		
Aud	Ohio	V	2007	Autism Scholarship Program	●		
Aud	Utah	V	2007	Carson Smith Special Needs Scholarship Program		●	
Aud	Milwaukee, WI	V	2007	Milwaukee Parental Choice Program	●		
Aud and Michos	Washington, D.C.	V	2006	Opportunity Scholarship Program	●		
Lueken	Alabama	TCS	2024	Alabama Education Scholarship Program	●		●
Lueken	Arizona	TCS	2024	Original Individual Income Tax Credit Scholarship Program	●		
Lueken	Arizona	TCS	2024	Low-Income Corporate Income Tax Credit Scholarship Program	●		
Lueken	Arizona	TCS	2024	Lexie's Law for Disabled and Displaced Students Tax Credit Scholarship Program	●		
Lueken	Arizona	TCS	2024	"Switcher" Individual Income Tax Credit Scholarship Program	●		
Lueken	Florida	TCS	2024	Florida Tax Credit Scholarship Program	●		●
Lueken	Georgia	TCS	2024	Qualified Education Expense Tax Credit	●		
Lueken	Illinois	TCS	2024	Invest in Kids Scholarship Tax Credit Program	●		
Lueken	Indiana	TCS	2024	School Scholarship Tax Credit	●		
Lueken	Iowa	TCS	2024	School Tuition Organization Tax Credit	●		
Lueken	Kansas	TCS	2024	Tax Credit for Low Income Students Scholarship Program	●		
Lueken	Louisiana	TCS	2024	Tuition Donation Rebate Program	●		
Lueken	Nevada	TCS	2024	Educational Choice Scholarship Program	●		●
Lueken	New Hampshire	TCS	2024	Education Tax Credit Program	●		
Lueken	Oklahoma	TCS	2024	Oklahoma Equal Opportunity Education Scholarships	●		●
Lueken	Pennsylvania	TCS	2024	Educational Improvement Tax Credit Program	●		
Lueken	Pennsylvania	TCS	2024	Opportunity Scholarship Tax Credit Program	●		

V=Voucher TCS=Tax-credit scholarship

\*State of Wisconsin Legislative Audit Bureau

†The Florida Supreme Court declared that the private school voucher component of the program was unconstitutional in January 2006.

Notes: This table shows all empirical studies using all methods; the total fiscal effect of school choice programs is referenced. Table excludes any analyses that fail to make a reasonable attempt to account for both sides of the ledger, i.e. both costs and savings from school choice programs. If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect." Lueken (2021) employs the same methods as: Martin F. Lueken (2018). Fiscal Effects of School Vouchers: Examining the Savings and Costs of America's Private School Voucher Programs. Retrieved from EdChoice website: <https://www.edchoice.org/wp-content/uploads/2018/09/Fiscal-Effects-of-School-Vouchers-by-Martin-Lueken.pdf>

## FISCAL EFFECTS ON TAXPAYERS AND PUBLIC SCHOOLS FROM EMPIRICAL STUDIES (CONTINUED)

Author	Location	Program Type	Year	Program Name	Any Positive Effect	No Visible Effect	Any Negative Effect
Lueken	Rhode Island	TCS	2024	Tax Credits for Contributions to Scholarship Organizations	●		
Lueken	South Carolina	TCS	2024	Educational Credit for Exceptional Needs Children	●		
Lueken	South Dakota	TCS	2024	Partners Education Tax Credit Program	●		
Lueken	Virginia	TCS	2024	Education Improvement Scholarships Tax Credits Program	●		
Griffin and Kieffer	Georgia	TCS	2023	Georgia Qualified Education Expense Tax Credit	●		
Montgomery	Iowa	TCS	2022	School Tuition Organization Tax Credit	●		
Nikolov and Mangum	Virginia	TCS	2021	Education Improvement Scholarships Tax Credits Program	●		
Erickson and Scafidi	Georgia	TCS	2020	Qualified Education Expense Tax Credit	●		
Sheasby**	Arizona	TCS	2020	All four tax-credit scholarship programs**	●		
Dearmon and Evans	Oklahoma	TCS	2018	Oklahoma Equal Opportunity Education Scholarships	●		
SummaSource	Alabama	TCS	2017	Alabama Education Scholarship Program	●		
LOEDR‡	Florida	TCS	2012	Florida Tax Credit Scholarship Program	●		
OPPAGA§	Florida	TCS	2008	Florida Tax Credit Scholarship Program	●		
Aud	Arizona	TCS	2007	Original Individual Income Tax Credit Scholarship Program	●		
Aud	Pennsylvania	TCS	2007	Educational Improvement Tax Credit Program	●		
Aud	Florida	TCS	2007	Florida Tax Credit Scholarship Program	●		
Collins Center for Public Policy	Florida	TCS	2007	Florida Tax Credit Scholarship Program	●		
Merrifield & Gray	San Antonio, TX	P	2009		●		

TCS=Tax-credit scholarship; P=Private scholarship

\*\* Results could not be broken out by program.

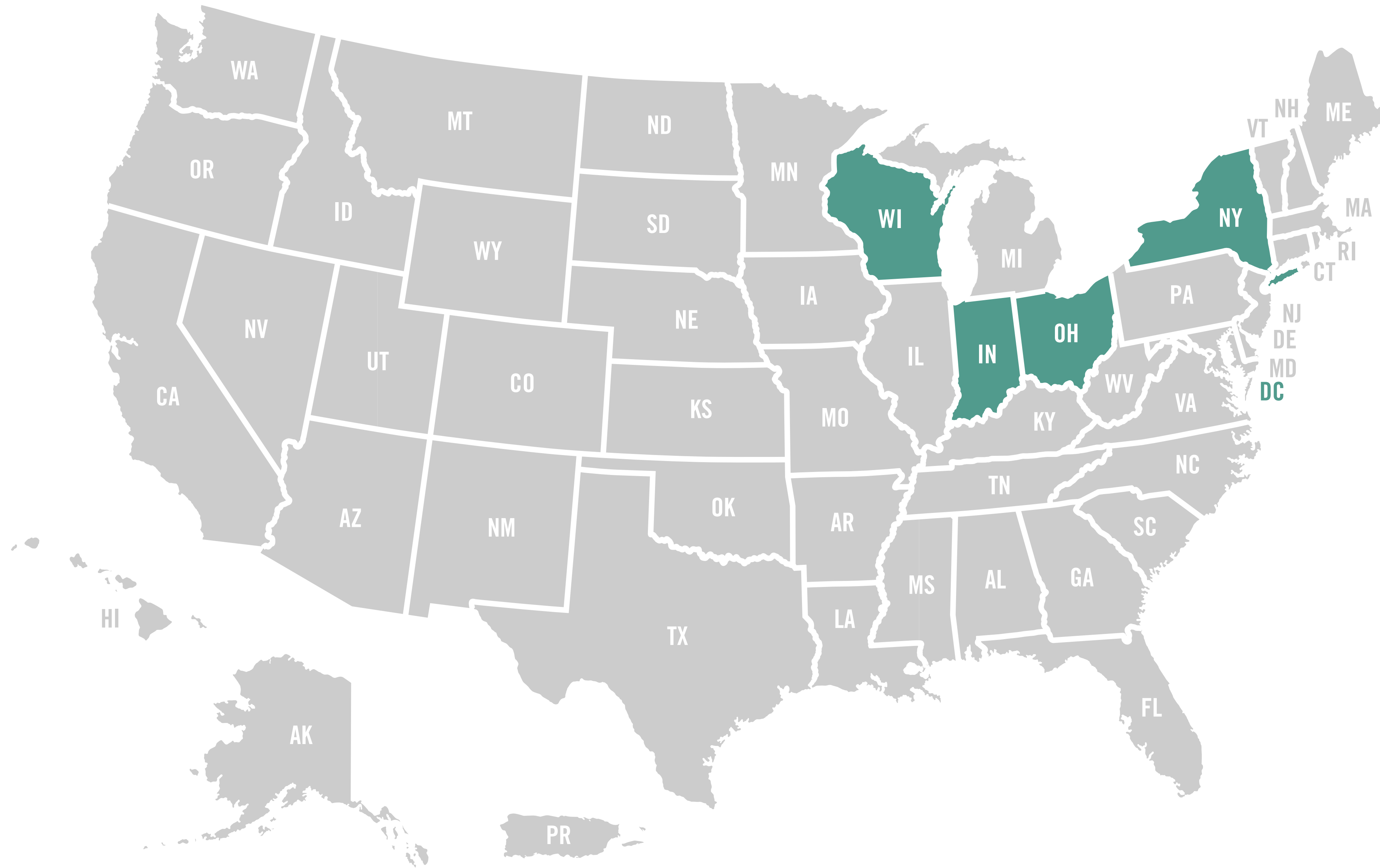
‡LOEDR stands for Legislative Office of Economic and Demographic Research (State of Florida)

§OPPAGA stands for Office of Program Policy Analysis and Government Accountability (State of Florida)

Notes: This table shows all empirical studies using all methods; the total fiscal effect of school choice programs is referenced. Table excludes any analyses that fail to make a reasonable attempt to account for both sides of the ledger, i.e. both costs and savings from school choice programs. If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect." Lueken (2021) employs the same methods as: Martin F. Lueken (2018). Fiscal Effects of School Vouchers: Examining the Savings and Costs of America's Private School Voucher Programs. Retrieved from EdChoice website: <https://www.edchoice.org/wp-content/uploads/2018/09/Fiscal-Effects-of-School-Vouchers-by-Martin-Lueken.pdf>

As numerous surveys of parents of school-age children have told us, parents are concerned about school safety. It is usually at the top of the list when parents are asked to rank the factors they care about.<sup>5</sup> This section reviews studies that examine the effect of educational choice on school climate and safety-related issues such as student bullying, physical conflict, gang activities, drug-related problems, discipline issues, and safety practices.

# NUMBER OF STUDIES ON SCHOOL SAFETY EFFECTS BY LOCATION



# SCHOOL SAFETY AND CLIMATE FROM ALL EMPIRICAL STUDIES

Author	Location	Program Type	Year	Program Name	Any Positive Effect	No Visible Effect	Any Negative Effect	RCT
Witte et al.	Milwaukee, WI	V	2008	MPCP	●			
Wolf et al.	Washington, D.C.	V	2010	DCOSP	●			●
DeAngelis & Lueken	Indiana	V	2019	ICSP	●			
Webber et al.	Washington, D.C.	V	2019	DCOSP	●			●
Peterson & Campbell	National	P	2001		●			●
Howell & Peterson	New York, NY	P	2002		●			●
Howell & Peterson	Dayton	P	2002		●			●
Howell & Peterson	Washington, D.C.	P	2002		●			●

V=Voucher; MPCP = Milwaukee Parental Choice Program; DCOSP = D.C Opportunity Scholarship Program; ICSP = Indiana Choice Scholarship Program

# Other Reviews of Research

Most studies of educational choice evaluate a single program. This creates a challenge for understanding the effects of choice writ large, because programs vary greatly: Who is eligible? How much money is available and how is it distributed? What regulations apply to participating schools and families? These are just a few differences that make it hard to report on educational choice as a concept rather than a specific program. To answer their questions, researchers appraise and synthesize the broad body of research evidence by conducting systematic reviews which integrate research findings in an attempt to come to a more general understanding of the impact of educational choice programs.

We identified 22 papers that integrate findings from studies on all eight outcomes we examine in this edition of *123s of School Choice*, which amount to 31 distinct analyses. To review, the eight outcomes include participant test scores, competition, educational attainment, integration, civic values and practices, parent satisfaction, fiscal effects, and school safety. One of the 22 papers synthesizes research that evaluated the Milwaukee Parental Choice Program. The remainder of these reviews synthesized studies of multiple programs across the country.

Five of these studies are meta-analyses. A meta-analysis is a “study of studies” or “secondary research” which uses statistical techniques to merge findings (effect sizes) from multiple analyses to calculate an overall effect, and it is considered the most rigorous approach to synthesizing a body of research literature. Three of these meta-analyses looked at effects on participant test scores. The most recent meta-analysis was conducted by researchers from the University of Arkansas, who found, based on estimates of the most recent year of treatment in the studies, that

students in the U.S. experienced positive gains on test scores that equate roughly to 30 more days of learning in reading and math. They note that “analyses based on the most recent year are considered more relevant to policy than earlier results, as stakeholders may have changed their behavior in response to vouchers.”<sup>1</sup> Notably, they also note that, “the longer a sample of voucher students has been treated, the larger and more positive the achievement effects tend to be.” One meta-analysis covered the competitive effects on students who remain in public schools. The team of researchers, headed by a group at the University of Texas at Austin, concluded, “In general, competition resulting from school-choice policies does have a small positive effect on student achievement. The lack of an overall negative impact on student outcomes might ease critics’ concerns that competition will hurt those students ‘left behind’ due to school-choice policies.”<sup>2</sup>

The final meta-analysis, from Danish Shakeel and a group from the University of Arkansas, studied the effect of private schooling on four measures of civic values and practices: political tolerance, political participation, civic knowledge and skills, and voluntarism and social capital. When focusing on private school choice programs, the researchers found no significant effect, but the effect of private schooling as a whole was significant and positive.

The other studies represent different varieties of research reviews. Some are systematic reviews that specify a rigorous and comprehensive search process and inclusion criteria. Others include one of these elements but stop short of a systematic review.

i. Danish Shakeel, Kaitlin P. Anderson, and Patrick J. Wolf (2021), The participant effects of private school vouchers around the globe: a meta-analytic and systematic review, *School Effectiveness and School Improvement*, 32(4), pp. 509-542, <https://doi.org/10.1080/09243453.2021.1906283>

ii. Huriya Jabbar, Carlton J. Fong, Emily Germain, Dongmei Li, Joanna Sanchez, WeiLing Sun, and Michelle Devall (2019), The competitive effects of school choice on student achievement: A systematic review, *Educational Policy*, 36(2), pp. 1-35, <https://doi.org/10.1177/0895904819874756>

# RESEARCH REVIEWS OF PRIVATE SCHOOL CHOICE RESEARCH

Author	Author	Outcome Studied	Positive Effect Overall	Neutral Effect Overall, Mixed, or Inconclusive	Negative Effect Overall	Research Method
Lubienski & Weitzel	2008	Participant test scores	●			Narrative Review
Miron, Evergreen, & Urschel	2008	Participant test scores	●			Systematic review
Wolf	2008	Participant test scores	●			Narrative Review
Rouse & Barrow	2009	Participant test scores		●		Narrative Review
Rouse & Barrow	2009	Competition		●		Narrative Review
Usher & Kober	2011	Participant test scores		●		Systematized review
Anderson, Guzman, & Ringquist	2013	Participant test scores	●			Meta-analysis
Egalite	2013	Competition	●			Systematic review
Bozzo	2016	Participant test scores	●			Narrative Review
Bozzo	2016	Competition	●			Narrative Review
Egalite & Wolf	2016	Competition	●			Narrative Review
Egalite & Wolf	2016	Participant test scores		●		Narrative Review
Egalite & Wolf	2016	Attainment	●			Narrative Review
Egalite & Wolf	2016	Integration	●			Narrative Review
Lubienski & Brewer	2016	Participant test scores		●		Commentary
Wolf & Egalite	2016	Competition	●			Narrative Review
DeAngelis	2017	Civic Values and Practices	●			Systematic review
Epple, Romano, and Urquiola	2017	Competition	●			Narrative Review
Epple, Romano, and Urquiola	2017	Participant test scores		●		Narrative Review
Epple, Romano, and Urquiola	2017	Attainment	●			Narrative Review
Ford & Andersson*	2017	Participant test scores	●			Narrative Review
Ford & Andersson*	2017	Competition	●			Narrative Review
Ford & Andersson*	2017	Fiscal	●			Narrative Review
Foreman	2017	Attainment	●			Systematic review
Fryer	2017	Participant test scores		●		Meta-analysis
Rhinesmith	2017	Parent Satisfaction	●			Systematic review
Swanson	2017	Integration	●			Systematic review
DeAngelis & Wolf	2019	Civic Values and Practices	●			Narrative Review
Jabbar et al.	2019	Competition	●			Meta-analysis
Schwalbach & DeAngelis	2020	Safety	●			Systematic review
Shakeel, Anderson, & Wolf	2021	Participant test scores	●			Meta-analysis
Shakeel et al.	2024	Civic Values and Practices		●		Meta-analysis

\* Ford and Andersson (2017) limit their review to evaluations of the Milwaukee Parental Choice Program only. All other research reviews listed in this table reflect studies of private choice programs across the United States.

# APPENDIX 1: Bibliography

## PARTICIPANT TEST SCORES

Listed in chronological order, starting with most recent

Heidi H. Erickson, Jonathan N. Mills and Patrick J. Wolf, “The Effects of the Louisiana Scholarship Program on Student Achievement and College Entrance,” *Journal of Research on Educational Effectiveness*, 14(4), pp. 861-899, 2021, <https://doi.org/10.1080/19345747.2021.1938311>.

Anna J. Egalite, D. T. Stallings, and Stephen R. Porter, “An Analysis of the Effects of North Carolina’s Opportunity Scholarship Program on Student Achievement,” *AERA Open*, 6(1), pp. 1–15, 2020, <https://files.eric.ed.gov/fulltext/EJ1248492.pdf>.

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Joshua Cowen, “School Choice as a Latent Variable: Estimating the ‘Complier Average Causal Effect’ of Vouchers in Charlotte,” *Policy Studies Journal*, 36(2), pp. 301–315, 2008, <https://dx.doi.org/10.1111/j.1541-0072.2008.00268.x>.

Carlos Lamarche, “Private School Vouchers and Student Achievement: A Fixed Effects Quantile Regression Evaluation,” *Labour Economics*, 15(4), pp. 575–590, 2008, <https://doi.org/10.1016/j.labeco.2008.04.007>.

Eric Bettinger and Robert Slonim, “Using Experimental Economics to Measure the Effects of a Natural Educational Experiment on Altruism,” *Journal of Public Economics*, 90(8–9), pp. 1625–1648, 2006, <https://dx.doi.org/10.1016/j.jpubeco.2005.10.006>.

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Jay P. Greene, Paul Peterson, and Jiangtao Du, “Effectiveness of School Choice: The Milwaukee Experiment,” *Education and Urban Society*, 31(2), pp. 190–213, 1999, <https://dx.doi.org/10.1177/0013124599031002005>.

Cecilia E. Rouse, “Private School Vouchers and Student Achievement: An Evaluation of the Milwaukee Parental Choice Program,” *Quarterly Journal of Economics*, 113(2), pp. 553–602, 1998, <https://dx.doi.org/10.1162/003355398555685>.

## PARTICIPANT EDUCATIONAL ATTAINMENT

Listed in chronological order, starting with most recent

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# APPENDIX 2: How to Use Research

When it comes to evaluating any public policy, social science is an important, but limited, tool in our toolbox.

The findings of studies, articles, and reports must be examined not only for their validity but also must be put in the context of values and priorities that exist outside the realm of the measurable and quantifiable. Studies are limited by their samples, their methods, the data available to researchers, and the quality of the outcome measures used to determine impact. If the sample is too limited, the data too messy, or the outcome measure uncorrelated with what we really care about, a study's large effect size might not be meaningful. Studies like this one get published all the time. Careful readers will dig into them before drawing broad sweeping conclusions.

But even the best designed studies are limited to things that we can measure and count. It is quite challenging to put a number on liberty, autonomy, dignity, respect, racism, or a host of constructs that we all know exist and are meaningful. Even if an intervention has a positive effect on some measurable outcome, it might violate a principle that supersedes it.

Social science should be used as a torch, not a cudgel. It should help us understand how programs work and how they can work better. As an organization that both creates research related to private school choice and regularly uses it, we think it is important to both summarize the extant literature on the topic and speak frankly about both its strengths and limitations.

So, before we dive into the literature on private school choice, there are several important contextual issues to discuss. We also want to take a moment and explain some of the decisions that we made to include some studies in our review and not others.

## HETEROGENEITY OF TREATMENT

Gertrude Stein wrote “a rose is a rose is a rose,” but is it also true that “a voucher is a voucher is a voucher?” Not necessarily. No two private school choice programs are alike. They differ across an array of design features, from how they are funded to rules on accountability to eligibility criteria. The Cleveland Scholarship Program, for example is worth \$5,500 annually for elementary students and \$7,500 for high school students, while the DC Opportunity Scholarship is worth \$10,204 for elementary school students and \$15,307 for high school students. Louisiana schools that enroll students from that state's scholarship program must also administer the state's standardized test. Students in Florida's Tax Credit Scholarship Program must take one of several approved nationally-normed standardized tests. Some programs allow schools to apply admissions requirements to students, but others do not. Some allow families to “top up” their scholarship, adding their own money to help pay for more expensive schools, while others require participating schools to accept the voucher for the full cost of the program. Some programs require students to apply to a school first, and then apply for the voucher. Others have students apply for the voucher first and then apply to the school. Some programs are statewide while others are limited to certain geographic areas. Some are limited to low-income students, and others are limited to students with special needs. The list goes on.

Any reasonable observer would expect these variations to make a difference to the students and schools that participate. When we see different outcomes from different studies, we must ask how much is due to the specifics of the programs.

What works in one place and time may not work everywhere and for all time. The findings of one study that looks at one program may not apply to a program elsewhere, even if the two programs are similar. The more dissimilar they are, the more cautious we should be. This is why, in our summaries, we are clear about the geographic location of the studies that we describe, so that readers can understand the context around the findings.

## MEASURES MATTER

It is always important to understand what researchers are measuring. Testing is widely implemented across all sectors of schooling, and thus it is unsurprising that a healthy segment of the school choice literature studies programs' effects on student test scores. But it is important to note that testing is used differently in different education sectors. For most public and charter schools, test scores are part of state accountability systems. These schools can be rewarded or penalized based on how well students perform. Most private schools do not participate in these systems. If you use a measure that one sector is pushed to maximize by the state and use it to examine a sector that is not, you could have trouble. You might confuse the effect of that pushing with the effectiveness of the school and school choice policy.

Second, many private schools eschew state standards and state standardized tests. They argue that those tests do not measure what matters and thus teach their own curriculum aligned to what they think is most important. If we use the results on the state test to compare these schools, we might yet again confuse the results. The scores of schools that are aligned to the state curriculum might do better, not because they are “better” schools, but simply because they are teaching more explicitly what the state test is measuring.

It is also important to know why parents make choices. If they don't value test scores, we shouldn't be surprised if the schools they choose don't have the highest scores. Think of it this way. Some folks like big pickup trucks because they want to haul stuff in the bed or tow their boat to the lake on the weekend. They choose based on cargo space and towing capacity. If we measure cars based on fuel efficiency, arguing that fuel-efficient cars are better cars, it will look like people who buy trucks are making “bad” choices. They aren't. They are simply choosing on a different dimension.

Finally, it is important to note two papers that documented evidence suggesting a disconnect between test scores and long run outcomes such as educational attainment in school choice program evaluation. There are plausible explanations for this disconnect. For instance, if a private school and a public school have different test scores, the reason may be that they have different curricula, not that one is better than the other. Long-run outcomes of educational attainment, on the other hand, may yield better proxies for how a private school choice program affected a student's employment prospects and future earnings. So far, no study has examined the effect of any private school choice program on outcomes related to earned income or employment.

## WHY RANDOMIZED CONTROL TRIAL STUDIES?

When evaluating the effect of a private school choice program, we must ask the key question: “Compared to what?”

A decrease in average graduation rates among students participating in a choice program doesn’t tell us much about the effectiveness of the program. Comparing the change in program participants’ graduation rates with students in public schools is somewhat better, but even this comparison provides limited (and possibly misleading) information about the program’s effectiveness. There may be factors not being accounted for or observed that explain any difference in those outcomes. This possibility is strong in the world of school choice research, as families who participate in school choice programs may have different motivations than those who do not. In fact, trying to cope with *selection bias* is a central methodological issue in estimating the effects of school choice programs.

Ideally, to evaluate the effectiveness of a school choice program, we would compare the change in outcomes between students who use a scholarship with the change in outcomes of an identical group of students (“twins”) who do not participate in the program. Creating a comparison group that provides an “apples-to-apples” comparison is challenging.

The best methodology available to researchers for generating “apples-to-apples” comparisons is a randomized control trial, which researchers also refer to as random assignment studies. These studies are also known as experimental studies and are widely considered to be the “gold standard” of research methodology. In fact, the What Works Clearinghouse in the U.S. Department of Education designates RCTs as the only research method that can receive the highest rating, “Meets Group Design Standards ***Without Reservations***” [emphasis added].

In RCTs, some random process (like a random drawing) assigns students to the treatment and control groups. This method is often referred to as the “gold standard” of research methods because the treatment and comparison groups are, on average, identical except for one aspect: one group receives the intervention while the other does not. We can attribute any observed differences in outcomes to the treatment (a causal relationship).

Researchers that conduct RCT studies (also called “random assignment” studies) may report unbiased estimates of effects based on two different comparisons:

1. Researchers may report estimates for “intent-to-treat” (ITT) effects, which compares outcomes between students who won the lottery and students who did not win the lottery. ITT is the estimated effect of winning the lottery.
2. Researchers may also report “treatment-on-the-treated” (TOT) effects, which compare differences in outcomes between students who attended a private school and students who did not attend private school, regardless of their lottery outcome. TOT is the estimated effect of using the voucher.

When random assignment is not possible, some researchers use statistical techniques to approximate randomization. These studies are sometimes called nonexperimental studies. All research methods, including RCT, have tradeoffs. While RCTs have very high internal validity because of its ability to control for unobservable factors (e.g., student and parent motivation), they do not necessarily provide very high (or low) external validity.

**Internal validity** is the degree to which the effects we observe can be attributed to the program and not other factors.

**External validity** is the extent to which results can be generalized to other students in other programs.

In addition to having a high degree of internal validity, another reason we favor RCTs over other methods is that, in the context of evaluating private school choice programs, RCTs occur at the level of the program itself. This is in contrast with RCTs in other education policy areas, such as charter schools. In charter school RCTs, lotteries occur at the school level, meaning that only schools that held lotteries are included in the study. Given that high-quality schools are likely to be in high demand and oversubscribed, results from these studies are likely to represent oversubscribed schools and may exclude schools that are in low demand. Results from RCT studies of programs where the lottery is held at the program level give us an estimate of the effect of the program rather than just oversubscribed schools.

## WHY NO EFFECT SIZES?

This guide is a summary of the relevant research on private school choice programs. It is not a meta-analysis of those research areas. Meta-analyses attempt to look at the estimates of program effects from individual studies and combine them to determine an overall average effect across all of the studies. These are difficult and complicated studies to do well. They involve norming the effect sizes to numbers that can be combined with one another and averaged.

That kind of methodology is beyond the scope of our project here. Our goal is to summarize the literature. To do so, we have sacrificed a measure of specificity. We believe that tradeoff is worth making. Where possible, we cite relevant meta-analyses and systematic reviews that have been conducted on the literature of the particular topics that we explore.

Now that we have that out of the way, we share our summary findings in the rest of this publication. We have undertaken this exercise to help *inform* the debate, not to circumvent it. These findings, as with all findings of social science research, must be taken in their proper context and with the appropriate qualifications and caveats. We hope to set that example at EdChoice in the ways that we use the findings of the studies that follow, and fully expect to hear from our readers when we do not.

# APPENDIX 3: Methodology

## SEARCH AND INCLUSION

This appendix details the inclusion criteria used to collect studies for each of the outcome categories included in this volume.

For each edition of *The 123s*, we scan databases and journals and prioritize a set of core key terms to find all relevant literature about school choice. In the first edition published in 2019, we scanned across decades of education research literature, but for each edition after that, we scan for the calendar year prior to publication. For this 2025 edition, the scan spanned from January 2024 through January 2025. The scans included publications, reports, journal articles, and dissertations published in the following locations during this period:

- EBSCO Host
- ProQuest
- ERIC
- Google Scholar
- JSTOR
- Journal of Education Finance and Policy
- Journal of School Choice
- Education Next

For each of the above sources, we applied the following search terms:

- “school choice”
- “school AND voucher”
- “education AND vouchers”
- “tax AND credit AND scholarships”
- “tuition AND tax AND credits”
- “ESA”
- “education AND savings AND accounts”

After removing duplicate entries, we collected 29,136 publications. We manually reviewed each of these records to determine its relevance to *The 123s*, excluding entries if they were not related to private school choice programs in the United States (vouchers, ESAs, or tax credit scholarships), if they did not analyze one of our eight outcomes of interest, if they were not empirical studies, if they were not quantitative studies, or if they were theses for programs below the doctoral level. Some outcomes allow stricter criteria inclusion and are specified below.

We try to be aware of new studies that meet our inclusion criteria and are published between the end of our scan and the time we prepare *The 123s* for publication, which is why a 2025 paper is included in this edition. But we cannot ensure that we have included all relevant studies published between February 2025 and this edition’s publication date.

## MULTIPLE STUDIES OF THE SAME PROGRAMS

We include multiple studies of the same program in our review as unique observations, as replication is an integral part of the scientific process for discovering truth. It is important to consider research by different researchers who study the same programs and different students. It is also important to consider reports that use different rigorous methods. If these efforts arrive at similar conclusions, then we can be more confident about our conclusions.

We also took care to avoid unnecessary double counting, as this could lead to one program excessively influencing the results. If an article or paper includes multiple distinct analyses of different private school choice programs, then we counted each of the analyses as distinct studies. We include replication studies by different research teams and studies that use different research methods.

In cases where a team of researchers conduct multiple studies to evaluate a given program over, we include the most recent analysis from the evaluation. We exclude studies that were conducted by the same researchers or research team using the same data.

## METHODS FOR STUDIES

This subsection offers overviews of the research methods of included studies.

### Participant Test Scores and Attainment

Studies included in these sections use experimental methods, such as randomized control trials (RCTs), and quasi-experimental methods, such as matching and regression discontinuity. In the context of school choice research, random assignment happens when scholarship programs are oversubscribed and scholarships are awarded via lottery. The winners win scholarships to attend a private school and lottery losers do not receive vouchers. Studies that use matching methods compare students participating in a choice program with a group of students enrolled in public schools that have the same or similar observed characteristics, such as baseline test scores, free and reduced-price lunch status, race/ethnicity or parent characteristics. Regression discontinuity studies of school choice tend to compare outcomes of choice students who were just barely eligible for a program with outcomes of public school students who were just barely ineligible for the same program. In theory, students slightly on one side of an arbitrary cutoff should not be much different from students slightly on the other side, providing a situation that somewhat resembles randomization. We excluded studies that did not make a reasonable attempt to establish causal inference or control for selection bias. Studies that were merely correlational in nature are not included.

## Parent Satisfaction

Studies in this section survey parents of participating students to gauge satisfaction with their chosen private school compared to their previous school or compared to non-participant satisfaction levels.

Some of the programs allow for a random assignment approach, but most parent satisfaction studies are observational—meaning differences are compared within or across groups that were not randomly assigned.

## Public School Students' Academics

No studies on competitive effects use random assignment. An important concern with nonexperimental methods is that public schools that face greater competitive pressure from more expansive private school choice programs may be systematically different than public schools that do not. Researchers who conduct these studies attempt to use statistical techniques to address these concerns.

There are several ways that researchers estimate the effects of private school choice programs on public school students' test scores. For example, they may measure competition by estimating the percentage of students in a district or public school who are eligible for a choice program, with the idea being that public schools with a greater portion of students eligible for a program face greater competition because they stand to lose more students than if a smaller proportion of their students were eligible. They may also account for distance by measuring the proximity between a public school and the nearest private school. Some studies also use density measures, which count the number of private schools within a given radius or distance from the public school.

## Civic Values and Practices

Researchers rely primarily on surveys when they examine how private schools in choice programs differ from public schools, if at all, in how well they promote civic values. They compare measured outcomes between students participating in private school choice programs and similar students in public schools. Some studies compared students who applied to programs and were randomly assigned via lottery to treatment and control groups.

Studies researching tolerance observe the effect of students' tolerance for others before and after using school choice, largely via survey questionnaires that gauge whether students recognize the views and rights of groups with which they disagree. Tolerance is defined as a willingness to extend legal protections to groups with whom one has disagreements. Civic engagement is measured by political participation, voting, giving to charity, volunteering, and other indicators.

For the purposes of reporting civic outcomes, we consider only participants in voucher and private scholarship programs. Most studies of these programs have been peer reviewed and published in academic journals. Two forthcoming journal articles, an unpublished manuscript, and a conference presentation are also included in this review. This review includes random assignment and nonexperimental studies.

Though we might want to separate social order and criminal activity studies into two distinct sections, only one such study exists to date, so this research area has been consolidated here. This study matched students who participated in Milwaukee's voucher program with students in the Milwaukee Public School district. It examined whether students who used vouchers were more likely to engage in criminal activity than their matched peers.

## Racial/Ethnic Integration

The studies in this section use a variety of methods. Most studies lead to descriptive results. These measures of integration compare the following, for both public and private schools:

- the racial/ethnic composition of public and private schools and the racial/ethnic composition of the choice program's metropolitan area
- the racial/ethnic composition of public and private schools before and after the introduction or expansion of a choice program
- the racial/ethnic composition of public and private schools, assuming choice students had enrolled in their district schools instead
- the racial/ethnic composition of classrooms in public and private schools compared with the racial composition of the nation's general population
- the shares of public and private schools that are racially homogenous (usually defined as a school with at least 90% of student enrollment that is either white or minority)

Methods that move a step closer to providing causal evidence use student-level data over time. They identify the effect that choice program participants had on the racial/ethnic composition of originating and receiving schools after they participated in the choice program. The table below depicts the four possible outcomes.

A transfer that results in both schools becoming more integrated is considered positive while a transfer that leaves both schools less integrated is considered negative. Two of these effects are mixed (i.e., a student transfers and the original school becomes more integrated while the receiving school becomes less integrated, or vice versa).

**Segregation Effects, Possible Outcomes After Student Transferred via Choice Program**

	Receiving school became MORE integrated	Receiving school became LESS integrated
Originating school became MORE integrated	POSITIVE	MIXED
Originating school became LESS integrated	MIXED	NEGATIVE

We include empirical studies only and do not include simulation studies.

**Fiscal Effects**

Researchers and fiscal analysts have used a variety of accounting techniques to estimate the fiscal effects of private school choice programs, including effects on different taxpayers. Any fiscal analysis should account for switchers, or students who would likely enroll in a public school if they did not receive any financial assistance from the choice program being studied. It is not accurate to assume that all students using school choice programs would attend private schools even without access to the program.

Because it is impossible to know with certainty whether how many students are switchers, some analyses also report “break-even switcher rates” for program, or the share of program participants who must be switchers for a program to be cost-neutral. Break-even switcher rates are intended to give policymakers a sense about a program’s fiscal impact, i.e., if it is likely to generate net savings or net costs.

We review all fiscal analyses of operational U.S. school choice programs—both publicly funded and privately funded—that make a reasonable attempt to account for both costs and savings associated with switchers. We exclude any analyses that report estimates only for the cost of scholarship. We do not consider fiscal analyses of school choice bills, such as legislative fiscal notes.

**School Safety and Climate**

Studies considered in this section employ random assignment, matching methods, and multivariate regression analysis that controls for student and school factors. In the context of school choice research, random assignment occurs via lotteries conducted for oversubscribed programs. Lottery winners are awarded scholarships to attend a private school, and lottery losers do not receive vouchers. Studies that use matching methods compare students participating in a choice program with a group of students who are enrolled in public schools and have the same or similar observed characteristics, such as baseline test scores, free and reduced-price lunch status, race/ethnicity or parent characteristics. Outcomes are measured as incidents or perceptions of school climate and safety-related issues reported by students, parents, and school leaders.

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