

K–12 Without Borders: Public School Students, Families, and Teachers Shut in by Education Boundaries

Martin F. Lueken

FISCAL RESEARCH AND EDUCATION CENTER DIRECTOR
EdChoice

Michael Q. McShane

NATIONAL RESEARCH DIRECTOR
EdChoice

Executive Summary

The U.S. is crisscrossed with unseen boundaries that can boost or bust the future of every student, can affect purchasing decisions about many Americans' most important asset—their home—and can force teachers to lose years of retirement wealth for moving, even if they remain educators.

American schools look the way they do because of these boundaries, especially school district borders. We do not need to eliminate school districts to transform U.S. education for the better, but we do need to make America's educational borders more permeable.

For students, access to high-quality schools often depends on their family's wealth or income, which determines how likely it is that a family can afford a home within a desirable school district. This access can have generational effects on socioeconomic status and racial stratification of educational attainment. Intra- and interdistrict choice programs, magnet schools, open enrollment, and other school choice programs can reduce the negative impacts of these borders, but questions remain. Taxation, transportation, and school funding all need to be addressed to implement choice policies that involve students crossing educational barriers.

For homeowners, severing or weakening the link between homes and school assignment is a fraught proposition. School choice could be considered a form of wealth redistribution, as the research is starting to reveal that, depending on the program on offer, housing price disparities across school districts narrow when these school choice programs are implemented. Some

ABOUT US

The Manhattan Institute is a think tank whose mission is to develop and disseminate new ideas that foster greater economic choice and individual responsibility.

homeowners who invested in a more expensive home for the sake of the in-district public school could see their property value decrease; but wealthier families would also face strong incentives to move into lower-quality school districts in order to take advantage of lower housing prices, boosting incomes, prices, and population in low-quality districts.

Teachers are affected by borders, as well: their pension border. Most retirement plans incentivize teachers to spend their entire career within one system; if teachers traverse sectors (for instance, if they move from a public school to a nonpublic school) or change states, they lose years of pension wealth.

The current pension model is not serving teachers as they live and work today. Better pensions for teachers would have three key features. First, they would work well for full-career as well as non-full-career teachers. Second, they would not have the arbitrary pull-and-push incentives of the current system. Finally, and most importantly, they would be more portable.

School districts are useful, and we do not suggest that they should be eliminated. But districts force students, teachers, and homeowners to settle or lose opportunities for something better. There would be challenges, but a borderless K–12 education system would mean that students would no longer be stuck in schools that are lower quality, or just not the right fit, simply because they live in the school’s catchment area. Teachers would have much more flexibility in where, and for how long, they work, without worrying about losing valuable pension wealth. Homeowners could worry less about school quality as an element of their household value.

Introduction

If you’re driving south on Dielman Road in northwestern St. Louis County, Missouri, right after you pass the Primm Place Apartments on your right and the Williams-James Mortuary on your left—but before you cross over the River Des Peres—you will trundle over an unassuming set of train tracks. If you don’t get stuck waiting there, you might hardly recognize crossing them. But those tracks represent something substantial: the border between the Ritenour and Ladue School Districts. Ladue is one of the highest-performing school districts in the state of Missouri. In 2019, 72.4% of its students were deemed proficient or advanced in English language arts by the state of Missouri, as were 70.6% of students in math and 65.8% in science.¹ Ritenour did not do so well: that year, only 34.2% of its students scored proficient or advanced in English language arts, 28.1% did so in math, and 26% did so in science.²

If you live on the north side of those tracks, you go to Ritenour. If you live on the south side, you go to Ladue.

Ladue’s borders do not correspond to the borders of other municipalities. The school district’s website states: “The Ladue School District is made up of all or part of ten different municipalities, including: Creve Coeur, Crystal Lake Park, Frontenac, Huntleigh Village, Ladue, Olivette, Richmond Heights, Town & Country, Westwood and Unincorporated St. Louis County.”³ The fact that the borders of the district are jagged, undulating, and seemingly arbitrary doesn’t diminish the fact that they are important.

This report is about the educational borders that have sprung up across our nation. Some, like the border between Ladue and Ritenour, are school district boundaries. They can form an invisible barrier between students and the schools that they might want to attend. Other borders, often aligned with the municipal boundaries of cities, counties, and states, restrict who can teach where, how much teachers are paid, and what their retirement looks like. Working on one side

CONTACTS

To request an information packet about MI, or if you have questions about how to support us, contact SUPPORT@MANHATTAN-INSTITUTE.ORG.

52 Vanderbilt Ave.
New York, NY 10017
(212) 599-7000
INFO@MANHATTAN-INSTITUTE.ORG

of a border or another can represent tens of thousands of dollars over a lifetime of work. Still others demarcate lines between different policy environments, where some states or regions of states allow for students and teachers to move more freely, while others do not.

The story of the American education system is a story of boundaries: school district boundaries; state boundaries; city boundaries; school catchment areas. All have profoundly shaped the way that American schools look.

It is difficult to argue against the notion that many of these boundaries are harmful to disadvantaged members of our communities. They harm students, who are often restricted in their options because they happen to live on one side or another of an invisible border. They harm homeowners, who have part of the value of their house tied up in the quality of local schools, something over which they have little control. And boundaries hurt teachers, whose pensions face a penalty if they move.

This situation needs to change. However, as G. K. Chesterton advised a century ago, before we tear down a fence, we should know why it was put there in the first place.⁴ State, county, and municipal boundaries are necessary and create the space for a shared civic life. Different cities will have different policies, from how they tax property to how they fill potholes. Competition for residents between localities pushes civic leaders to offer more efficient and effective government—but this competition works only because borders are porous. People can live in one city, work in another, and go for a meal or catch a ballgame in a third. The same is not true for education. Students and teachers are not able to move as easily, and students must attend schools linked to where they live, creating a stickiness that thwarts the healthy movement of democratic competition.

Breaking down or circumventing the barriers between where students live and where they go to school, where teachers work from year to year, and where tax dollars collected from homeowners go is key to a more fair and higher-quality school system.

In this report, we will explain how school district boundaries, which limit where children can attend school, can have negative impacts on students and homeowners, especially the most disadvantaged. We will also explain how boundaries, in the form of pension rules, negatively affect teachers.

We propose an alternative: a system with fewer boundaries—one that allows students to access a wide array of schools, regardless of where they live, and one that does not punish teachers for moving between public, charter, or private sectors, or between states (or even within states, in some instances)—will improve outcomes for students, increase equity among homeowners, and promote retirement security for teachers.

The year 2021 became a banner year for educational choice, with 18 states passing 28 bills to create new choice programs or expanding currently operating programs, including seven new programs introduced in Arkansas, Indiana, Kentucky, Missouri, New Hampshire, Ohio, and West Virginia.⁵ With respect to the scope and quality of programs being passed, 2022 is much different from previous years, including 2011, which the *Wall Street Journal* dubbed “The Year of School Choice.”⁶

Recent bills are more expansive in terms of program eligibility and funding. Consider Indiana: in 2011, it made national news by passing a school voucher bill that funded families making up to 150% of the federal poverty level. In 2021, Indiana expanded eligibility for that program to 300% of the poverty level, making almost 80% of families eligible.⁷ It also increased the voucher amount. Under the 2011 bill, families were funded at 50%, 70%, or 90% of state per-pupil funding, based on their income. The 2021 bill moved all families to 90% funding.⁸ This development

is significant because while targeted programs may fill empty seats in nonpublic educational settings, much more expansive programs are more likely to invite educational innovation and create new seats. Americans recently got a taste of this entrepreneurial activity with the Covid-era explosion of hybrid homeschools and educational pods.

As states continue to move toward providing more educational opportunities for families, teachers will need to fill some of the demands for a diverse set of options. The way that educational systems compensate teachers, however, is outdated and ill-equipped to facilitate a dynamic teacher labor market to meet families' needs.

Part I: Students

In 1940, the U.S. had a population of just over 131 million, and its 25.4 million children attended school in one of 117,108 school districts. By 2018, even though the national population had almost tripled, to 323 million, and the student population had doubled, to 50.6 million children, the number of school districts had dropped to 13,551.⁹ In the process of 10-fold consolidation of school districts, civic leaders drew and redrew boundaries. Sometimes, these boundaries were contiguous with natural boundaries like rivers or streams; other times, they aligned with political boundaries like state, county, or city borders.

After school district borders are drawn, they are further subdivided into school catchment areas. The majority of American schoolchildren, in fact, attend schools based on where they live.

Residential-Based Segregation

Many factors affect one's economic opportunity in life, and the neighborhood one grows up in is an important factor. Raj Chetty, an economist at Harvard University, heads the Equality of Opportunity Project and studied the effect that neighborhood characteristics have on upward economic mobility. Chetty and Nathaniel Hendren studied 5 million children whose families moved between counties between 1996 and 2012, and they identified characteristics of areas with higher rates of upward economic mobility: less racial and income segregation, less income inequality, better schools, lower crime rates, and more two-parent households.¹⁰ Children growing up in low-income households exposed to better areas experienced increases in income in adulthood, compared with similar children growing up in less favorable areas.

Because access to high-quality schools depends on a family's wealth or income, boundaries in the current system of public schooling create a major obstacle for low-income families to access better schools for their children. For instance, an analysis by Bellwether Education Partners demonstrates that many low-income families in highly sought school districts are often priced out of those districts and consequently cannot move to access those public schools.¹¹

The current residential-based assignment system all but determines the life trajectory of children because catchment areas affect neighborhood characteristics such as racial and income segregation, income inequality, and school quality, all of which are related to upward economic mobility. The roots of these problems run deep. New Deal-era housing programs like the Home Owners' Loan Corporation (HOLC), which was formed to help mortgage owners in default, baked the racial composition of neighborhoods into their eligibility for support.¹² That situation, along with the actions of private homeowners' associations that used residential covenants to exclude racial and ethnic minorities from the burgeoning middle-class neighborhoods proliferating

around American cities, locked black Americans, primarily, into particular neighborhoods. When local governments aligned school attendance to where people live, they exacerbated the segregative effects of these decisions.

Unfortunately, the consequences of these decisions remain today. In a 2021 study for the Urban Institute, Tomás Monarrez and Carina Chien examined contemporary school district boundaries and found that a huge number still align with the redlined HOLC maps from nearly a century ago. They conclude: “Persistent school segregation is the legacy of racist housing policy and the product of intentional decisions by the local governments that determine school attendance zones.”¹³

Boundaries for public schools have led to significant stratification across income and racial lines among districts, especially in metropolitan areas where racial segregation is heavy in areas that comprise a greater number of school districts, compared with areas with fewer districts.¹⁴ Economists documented the same pattern of stratification along lines of educational attainment.¹⁵

Lingering Racial Achievement Gaps

These segregation patterns are important for policymakers to address, given that public school quality is highly correlated with the racial makeup and wealth of the communities they serve. Consequently, the public K–12 model exacerbates majority-minority and socioeconomic achievement gaps.

Some researchers report narrowing of racial gaps to varying degrees over different study periods.¹⁶ Research on socioeconomic achievement gaps is more mixed, with studies finding no clear trend, a flat trend, or widening gaps.¹⁷ Still others report that socioeconomic achievement gaps have grown over the last 25 years.¹⁸

M. Danish Shakeel and Paul E. Peterson examined 7 million national norm-referenced tests in math and reading from 160 survey waves comprising cohorts born between 1954 and 2007. They report that young minority students progress at a greater rate than white students, though these differences lessen as students get older. They also report that income gaps among young students narrow, but widen as students get older. The researchers attribute the overall positive progress to a variety of education reform policies, including school choice, school desegregation, school accountability, finance equity, and English language learners (ELL) policies, noting that these policies had their greatest impact on cohorts born after 1990.¹⁹

While there is some evidence that racial achievement gaps, as measured by nationally norm-referenced exams, have narrowed, Eric Hanushek notes that minority-majority gaps in college completion have widened. Furthermore, although the present achievement gaps are smaller than for previous decades, they remain substantial. Hanushek estimates that these gaps translate to 10%–13% in lost lifetime earnings and notes that they may be as high as 50% after factoring in the indirect effects of achievement.²⁰ Likewise, Bailey and Dynarski report widening socioeconomic gaps in college entry, persistence in college, and college graduation.²¹ The American residential-based system of assigning public schools is an important contributing factor to these gaps, which translates into lost opportunity, and is in direct conflict with the principle of equality of opportunity.²²

Intra- and Interdistrict Mobility

Thinking about ways to make school district boundaries less determinative of a child’s educational options would be a good idea—if for no other reason than to try to right these historical wrongs. But there is more to it than that. The story that was told at the beginning of this report, about the Ritenour and Ladue School Districts, could be repeated thousands of times within and between

school districts. Getting zoned for a higher-performing school, or just a school that is a better fit for a child and his or her family, can be a great opportunity for a better education. Falling on the wrong side of that zoning line can produce the opposite result.

There have been efforts, if not to eliminate these educational borders, to at least make them more porous. These include intra- and interdistrict choice programs. Intra-district choice allows students to choose among schools within their school district. The most popular iteration of this policy is magnet schools, which, as the name implies, are designed to attract students based on unique offerings. Some magnet schools focus on rigorous academics; others focus on performing arts, science and technology, workforce development, or other specialized offerings. Students have occasionally even been able to cross district lines to attend magnet schools; more commonly, magnet schools are limited to students within a particular school district. Magnet schooling has grown over the past three decades: according to the National Center for Education Statistics (NCES), in 1990 there were 1,469 magnet schools across the country, enrolling 1.2 million students. By 2014, that number had increased to 3,285 schools enrolling 2.6 million students.²³

Unlike charter schools or traditional public schools, magnet schools are able to set admissions requirements. Sometimes these requirements are formal tests, like the famous Specialized High School Admissions Test to get into one of New York City's elite academic high schools. Other times, districts have grade-point average (GPA) and behavior requirements—for example, they require that students have not been suspended or subject to serious disciplinary issues before they are admitted. In many magnet schools, applications are considered on a first-come basis, with applications opening on a particular day and motivated parents jockeying to get to the front of the queue. Still others require interviews or parent meetings to ensure that the student is a good fit for the school.

Interdistrict choice, as the name implies, allows students to attend schools outside their traditional district. Historically, interdistrict transfer programs were created to comply with desegregation orders. In districts that were segregated, there were often not enough children of different races to desegregate the schools, so policymakers had to create plans to bring students in from other districts and send students out from the segregated schools. Milwaukee's Chapter 220 plan is a good example: starting in 1975, it provided for black students in the city to transfer to predominantly white suburban school districts and for white students from the suburbs to transfer into the city's schools. At its peak in the early 1990s, some 6,000 black students and 1,000 white students availed themselves of the program. It was eventually eclipsed by a broader open enrollment policy without explicit racial qualifications, and the program closed to new students in 2015.²⁴

General open enrollment programs have been growing, and not only in Wisconsin. Arizona, already a hotbed of many forms of school choice, has seen thousands of students take advantage of a state law that allows students to apply for admission to any public school in the state, regardless of where they live. The state does not have data on the total number of students who participate in open enrollment; but in one district alone—Scottsdale Unified—more than 3,800 out-of-district students attend schools, and more than 5,500 Scottsdale students enroll outside their neighborhood school.²⁵

Note the phrase “apply for admission.” As with most open enrollment programs across the country, students are not guaranteed a seat in their school of choice in the way they are in their local zoned school. In most programs, schools and districts have a lot of say in how many students they admit and how easy or difficult it will be for those students to attend. In a 2020 EdChoice report, Michael McShane and Michael Shaw investigated the transportation statutes of every state in the nation and found that while 30 states have some provision for funding interdistrict choice students, most have conditions for receiving that funding. In some states, it is available

only for students leaving “failing” schools; in others, it is only for students with special needs. Some require the sending school district to cover the cost; others place that burden on the receiving district. It is a confusing patchwork.²⁶

Limitations and Logistics: What Could Be for Students

Have efforts to poke holes in the borders and barriers that separate children from opportunity been sufficient? It is hard to muster an answer of yes.

Magnet schools and other intra-district programs have been wonderful additions to the offerings of school districts. Because of these programs, millions of children have had the opportunity to attend schools better attuned to their needs and aptitudes. This is a good thing. However, given that these programs purposely put up barriers to admission, they are not a solution for all students. That doesn’t mean that school districts should get rid of magnet schools; quite the contrary. But we do recognize their limitation as a tool for increasing educational opportunity.

It is much the same with open enrollment. Schools and school districts have been able to place restrictions and requirements that have limited who has been able to participate in open enrollment programs, and not all these requirements are unreasonable. For example, providing transportation for students all over a far-flung metro area would be a logistical nightmare. Local communities should have some say in who gets to attend their schools, given that they are largely funded by the community’s property taxes. But all these reasonable considerations conspire to lock out students from opportunities.

In both intra- and interdistrict choice, the district is taken as the foundation and organizing unit for policy, and a series of workarounds are created to try to minimize the role of districts. As we have stated, school districts emerged for good reasons. And, given the heterogeneity of the American landscape, having a lot of school districts is not necessarily bad. School districts can teach differently and learn from one another’s experimentation. Local communities can emphasize what is important to them in their local schools. The problem is that, along with those benefits derived from a district, students suffer from the negative effects of borders. The primary problems have already been identified—especially a lack of exit options for students or teachers (elaborated on below) who are not thriving. Thus, states must create policies to allow some students to transfer between districts and must work out the logistics to make that happen.

That is a clunky way to solve the problem. If we want to diminish the effects of borders, we need to think of organizational structures that don’t have the borders in the first place. These include charter schools, school vouchers, education savings accounts, and the like.

But then comes the question of funding. The real rubber-meets-the-road question of intra- and interdistrict choice comes down to who pays for what and what money goes where. Does the home district of a child pay for the student to attend the out-of-boundary school? Or does the district the child is actually being educated in pay? Who covers transportation? Does a child leaving a traditional school to attend a magnet school mean that the traditional school loses funding? Since a large portion of district budgets comes from locally produced property taxes, citizens want to know what is happening: *Why are we paying taxes to a school district if all its students are leaving?*

For practical, political, and fairness reasons, trying to move property-tax dollars across taxing jurisdictions should be avoided. Realistically, choice policies that involve students crossing educational barriers should be funded less by locally raised dollars and more by tax revenue collected at the state level. This could look different in different locations, but it could be achieved

in a neutral way—for example, a decrease in *local* property taxes and a concomitant increase in *state* property taxes. The local property taxes would stay local, but the state property taxes could follow children.

Part II: Homeowners

Despite the increase in schooling choices in the last few decades, American K–12 public education remains a predominantly residential-based assignment system. Under this system, the housing market rations access to high-quality schooling to families who can afford to live in those areas. Homes in areas with more desirable (high-quality) schools tend to have higher values than homes in areas with less desirable (lower-quality) schools. In the lingo of economists, school quality is capitalized into housing values.²⁷ This arrangement has led to households sorting across communities based on willingness and ability to pay for school quality.²⁸

Severing (or at least weakening) the link between homes and school assignment is a fraught proposition. School choice could represent widespread wealth redistribution, with homes currently zoned for lower-quality schools becoming more valuable, as the lower-quality schools no longer act as a drag on their value, and those currently zoned for better schools becoming less valuable, as they no longer represent a place in that school. Perhaps some people not currently interested in the idea of choice would become interested if it became a tool for wealth distribution. Those zoned in currently low-performing schools could see a direct financial benefit (assuming that they own their home). On the other hand, many homeowners who might be interested in the idea of choice would surely balk if they heard that doing so might shave value off their house.

But first, it is important to try to determine what, if any, effect school choice has on home prices. For that, we will need to address the academic literature.

Housing Prices and Public School Quality

For most children who attend public schools, the specific school they attend is determined by where they live. Based on the 2019 Parent and Family Involvement in Education Survey of the National Household Education Surveys (NHES) Program, 20% of respondents with K–12-age children indicated that they specifically moved to their current residence so that their child could attend a public school there.²⁹ Of parents with a child attending their residentially assigned school, about 80% said that the school was their first choice.³⁰ For many families with children, public schools appear central to their decisions on where to live.

The notion that people decide where to live based (at least in part) on the quality and variety of services offered by local governments can be traced back to Charles Tiebout’s 1956 seminal paper.³¹ The phrase “Tiebout choice” is commonly used in education policy to refer to voting with one’s feet. The quality of public schools is grounded in the Tiebout model, where people sort into the communities that provide the bundle of services and taxes that matches their preferences, school quality being a dominant service.

Wallace E. Oates identified the link in Tiebout’s model between housing prices and public school quality.³² Schools deemed high quality tend to be in wealthier neighborhoods, while poor-quality schools tend to be in poorer areas. That is, prices for two identical homes can significantly differ based on the homes’ assigned public schools if the quality of those schools differs significantly. The current residential-based assignment system enables this arrangement.

Many factors enter into families' decisions about where they live and where their children attend school. Determining the potential effects of voucher programs on property values and how families sort after more choice is introduced is complex. Families make these decisions for financial and nonfinancial reasons. Economists have studied the potential effects of weakening the link between residential location and school assignment on income and residential sorting by developing general equilibrium models.³³ They then calibrate these models to real-world data to simulate the effect of introducing private school voucher programs into the residential-based assignment system.

By weakening the link between home address and school quality, results from these simulations suggest that private school choice programs have the potential to significantly diminish income differences and housing price differences across public school districts. Eric Brunner describes this effect: “By decoupling the link between residential location and school quality, vouchers create an incentive for middle- and high-income families to move to less affluent districts in order to take advantage of lower housing values. As a result, residential income segregation declines, while housing values in low-quality districts rise and housing values in high-quality school districts fall.”³⁴

A growing body of research examines the effects of school choice policies on housing values and confirms the predictions from the general equilibrium simulation studies discussed above. Below, we summarize research that examines the impact of private school voucher programs, public charter schools, intra- and interdistrict choice programs, and magnet schools on housing values.

Housing Prices and Boundary-Breaking Education Programs

Several empirical studies examined the effects of private school voucher programs on property values. Merrifield et al. studied a privately funded voucher program in Texas that operated for 10 years (1998–2008).³⁵ They found that the program made the district in which it operated more attractive to homeowners, raising housing prices by up to 9.7% in the program's first year. These results attenuated in subsequent years, when the program became more restrictive.

A paper by Cannon, Danielsen, and Harrison studied the relationship between Vermont's town tuition program and property values.³⁶ The program is the nation's oldest voucher program and provides public funding for children living in areas that do not have an assigned public school serving their grade. The researchers examined three years of home sales data (2009–12) and estimated that living in an area that qualified for the program increased home values by 3%–16%.

Empirical studies on the effects of charter school entry on housing prices are somewhat more mixed, compared with the literature on private school choice programs. Buerger examined the effects of charter openings in three urban school districts in upstate New York:³⁷ in Syracuse, housing price gaps narrowed between wealthier and poorer areas; in contrast, housing value gaps in Niagara Falls and Ithaca between wealthier and poorer areas increased after charter entry.

Brehm, Imberman, and Naretta studied the effect of charter schools in the Los Angeles metropolitan area and found little evidence that increasing the number of charter schools or expanding charter school enrollment affected housing values.³⁸ They found some evidence that housing values in districts outside the Los Angeles Unified school district decreased by 2%.

Andreyeva and Patrick studied charter schools in the Atlanta metropolitan area to discern the impact of charter entry on property values.³⁹ Each charter school has at least two priority zones, and because students in priority-one zones have a higher probability of admission to a charter school than students in priority-two zones, they were able to compare the effect between the two areas. The researchers found that after a new charter school opens, housing prices increase by 6%–8% for homes in a priority-one zone, compared with homes in a priority-two zone.

They also found larger gains in areas with lower-quality traditional public schools, suggesting that charter schools weaken the link between home address and school quality and mitigate income stratification.

The various forms of choice within the public school system (interdistrict, intra-district, and magnet programs) appear to affect housing prices. Randall Reback’s study of Minnesota’s interdistrict choice program found that property values increased in districts that sent more students to other districts and decreased in districts that received more transfer students.⁴⁰ Michael Walden’s study of magnet schools in Wake County, North Carolina, found similar results.⁴¹ In grades with more magnet options, there was less of a local school-quality premium in house prices. Brunner, Cho, and Reback’s study of 12 states with mandatory interdistrict choice programs between 1989 and 1998 also confirmed these results. Their empirical models showed that interdistrict choice programs, on average, increased home values and average income by 5.2% and 3.0%, respectively, for districts that sent students to other districts. Moreover, interdistrict choice induces about 3.2% of households to move.⁴²

Researchers have recently examined the effects of school choice policies on how families sort across neighborhoods. Francis Pearman and Walker Swain studied the effects of open enrollment programs, voucher programs, charter schools, and magnet schools on the likelihood of neighborhood gentrification between 1999 and 2012. The authors found that “the expansion of school choice substantially weakens the relationship between a neighborhood’s racial composition and its likelihood of gentrification, such that the likelihood of gentrification in racially isolated neighborhoods of color increases by up to 22 percentage points—roughly twice the baseline likelihood for such communities—after the expansion of school choice.”⁴³

School Spending Will Not Solve Stratification

Following the California school finance case *Serrano v. Priest* in 1971, states passed a slate of school finance reforms (SFRs) over the ensuing decades in an attempt to equalize school funding. The logic at the time was that school spending varied considerably across districts because it was heavily determined by a district’s local property wealth, and families sorted in ways that led to considerable segregation in schools, based on income, such that children from wealthy families could access higher-quality schools while less wealthy families enrolled their children in lower-quality schools. SFRs would reduce funding disparities across districts and therefore weaken incentives for families to sort across districts by income.

Researchers have studied this area and found weak evidence that SFRs equalize school quality and mitigate stratification of households by income.⁴⁴ Results of these studies suggest that equalizing school funding is unlikely to equalize school quality and therefore unlikely to mitigate residential stratification. School spending is just one of several factors of school quality that correlate with income.⁴⁵ More importantly, SFRs appear not to have had their desired effect because they failed to change the current system of residential-based school assignment. Therefore, states wanting to mitigate these patterns and equalize opportunity have considered other policies that weaken or sever the link between residence and school quality. For example, states have considered policies to expand educational options for families via various school choice programs, such as private school choice policies, intra- and interdistrict choice, charter schools, and magnet schools.

Reform Can Raise All Households: What Could Be for Homeowners

Under the current model of public schooling based on residential location, racial and socioeconomic segregation has increased, racial and socioeconomic achievement gaps have increased, and inequity of opportunity has increased for more disadvantaged families. These trends would likely reverse in a world without educational borders. Economic theory and empirical research

suggest that removing borders will weaken the link between housing values and school quality. Thus, housing price disparities across school districts would narrow. Wealthier families would face stronger incentives to move into lower-quality school districts in order to take advantage of lower housing prices. This would lead to an increase in overall income, housing prices, and population in low-quality districts.⁴⁶

That said, research shows that the availability of choice programs increases housing values in general. Looking at the various studies of private school choice programs, it is clear that offering a wider set of choices to families can make a state or district more attractive to potential homeowners.⁴⁷ If moving to a particular state or district means that families would have the opportunity to choose between traditional public, charter, and private schools with state support, that would have an overall positive impact on home values, regardless of what parents end up choosing.

Part III: Teachers

Most people do not realize that teachers are affected by borders, as well, though not in quite the same way as students or homeowners. Teacher pension systems are typically statewide, except in cases such as Missouri, where St. Louis and Kansas City have their own pension systems. Teachers can typically move among districts within a system without facing a financial penalty; but if they move across a pension border (such as from St. Louis [city] to St. Louis County), across state lines, or to a private sector, they face a stiff financial penalty. Pensions are a huge, but underdiscussed, element of teacher compensation.

Pensions: Good for the Teacher, or Good for the System?

Most pension plans favor teachers who remain in a single system for a full career (until they reach retirement eligibility) and penalize teachers who don't remain in a system long enough to reach key retirement eligibility landmarks (because they leave the system early or because they enter too late).

If the policy goal for teacher retirement systems is to ensure that all teachers *who teach under a single retirement system for an entire career* are on a path to a secure retirement, then most public school teacher pension plans are meeting the objective.⁴⁸ If the goal, however, is to ensure that *all teachers* are on a path to a secure retirement, then most pension plans for public school teachers are missing the mark.

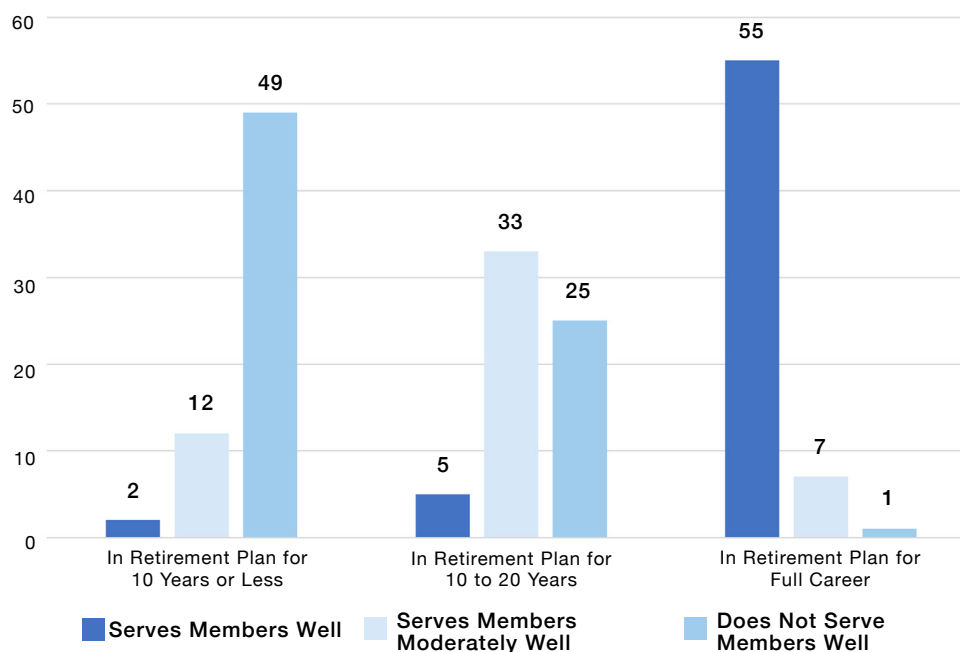
Equable Institute created the “Retirement Security Report” to assess the quality of retirement benefits provided to public-sector workers nationwide. If we focus only on findings for public school teachers, who constitute the largest group of the public-sector worker population, we can assess whether they meet the goal of providing a secure retirement. Equable measured certain components and parameters of retirement plans against widely accepted benchmarks, standards, and best practices.⁴⁹ It scored each retirement plan (there are 63 plans) for different types of workers: short-term workers, medium-term workers, and full-career workers. Short-term workers are those who remain in a single retirement plan for 10 years or less. Medium-term workers remain in single retirement plan for 10–20 years. Full-career workers work under a retirement plan until they reach normal retirement eligibility.

Most retirement plans that cover public school teachers (55 plans of 63) serve all teachers who remain in the plan for a full career well (**Figure 1**). For teachers who remain in a retirement plan for 10–20 years, only five plans serve those members well, while 33 plans serve these members

moderately well and 25 plans do not serve them well. For teachers who leave before staying 10 years with the plan, a mere two plans out of 63 serve teachers well, while 49 plans do not serve these members well.

Figure 1.

How Well State-Sponsored Public Pension Plans Serve Teachers, by Career Duration



Source: Equable Institute

How can so many teachers be so poorly served? One major reason is pension borders. Pension borders imply entry and exit from a single retirement system. One way these borders manifest is as physical boundaries, such as state or district borders. Every state provides a retirement plan for its public school teachers; thus, when teachers cross a state to teach in another public school, they cross a pension border. Cities in some states have their own retirement systems for public school employees, such as the separate systems in Missouri, mentioned above.

Pension borders may also be invisible, such as when teachers traverse sectors. For instance, whenever teachers move from a public school to any nonpublic school setting or vice versa, they cross a pension border because they enter or leave a public retirement system.

Most educators don't remain in a single system long enough to reach normal retirement eligibility, but most pension plans are antiquated and designed to benefit workers who do remain in a single retirement system for a full career. Full-career teachers represent a minority of all educators who enter these systems. For most teachers (i.e., those who are not full-career teachers), most retirement plans don't serve them well.

Financial Penalties on Teachers

Pension borders place a wedge in the labor market for teachers and other K–12 workers. By design, typical pension plans, called defined-benefit (DB) plans, create strong incentives for workers to remain in a single system for an entire career and to leave after a certain point.

Economists Robert Costrell and Michael Podgursky demonstrate that these strong pull-and-push incentives stem from the backloading nature of these plans.⁵⁰ Specifically, typical DB plans create strong financial incentives for teachers to remain in a system until arbitrary points in their career. These plans also have strong incentives for teachers to exit at arbitrary points, ignoring or overriding teachers' actual life circumstances that might cause them to leave teaching earlier or to remain teaching longer.

Since traditional DB plans were originally designed to keep workers in a system for a full career, they weren't designed with the best interests of mobile teachers in mind. Costrell and Podgursky illustrate how traditional DB plans impose significant fiscal penalties on mobile teachers.⁵¹ They examined six state-sponsored teacher pension plans and showed that teachers who split their career in two different systems lose, on average, about half the retirement benefits that they would have accrued had they worked under one system for the same number of years.⁵²

Even if a teacher works in a public sector for an entire career, she still faces steep penalties if she crosses a pension border before qualifying for full retirement benefits. For example, a teacher under Missouri's state pension plan who leaves after 15 years and continues working in a different system until age 55 will lose 65% of the pension wealth that she would have accrued had she stayed in the same system for the same number of years.⁵³

For a typical teacher in the largest school district in each state plus D.C., Martin Lueken compared the value of pension wealth accrual with the value of the teacher's contributions.⁵⁴ The median crossover point (the point when the value of benefits exceed contributions) for a representative teacher emerges 25 years after starting work in the system. That means that teachers in more than half the 51 districts must wait at least 25 years before their pension benefit is worth more than their own contributions.⁵⁵ For 35 of these districts, nearly 75% of teachers will leave before reaching the crossover point.⁵⁶ Thus, based on how retirement systems value benefits, most teachers do not see a return on their contributions for decades.

Pension borders affect all public workers, not just teachers, although teachers represent the largest group and are obviously a critical part of educating students. School leaders represent another important piece of the K–12 education puzzle. Cory Koedel et al. estimate that migration of Missouri public school leaders would increase 97%–163% if pension borders were removed.⁵⁷

Pension Portability: What Could Be for Teachers

Policymakers can take several steps to break down pension barriers. Better pensions for teachers would have three key features. First, they would work well for both full-career and non-full-career teachers. Second, they would not have the arbitrary pull-and-push incentives that the current system features. Finally, and most importantly, they would be more portable.

Pensions that work well for both full-career and non-full-career teachers would first have to eliminate vesting requirements. If teachers do not qualify for a pension until they reach five years of service, axiomatically every teacher who spends less than five years in service loses. Teachers should earn contributions to their pensions from the day that they start teaching.

But it isn't just vesting that harms non-full-career teachers. The jagged accumulation of pension wealth that grows slowly at first, only to rapidly accelerate at certain key milestones, and then plateau between them harms teachers who leave at inopportune times. These are the pull-and-push incentives that pull teachers to stay teaching until they hit a key pension-wealth milestone and then push them out immediately afterward by not increasing pension wealth for several years. These incentives need to go. Pension contributions should be smooth throughout a teacher's time of service.

Retirement plans are arranged in complex and varied ways. From the teacher’s perspective, it is possible to design good as well as bad plans, regardless of type. Most, but not all, DB plans are structured poorly. However, South Dakota and Wisconsin are examples of plans that do work well for most teachers because of the level of portability provided to members. States should introduce more portability in retirement benefits for teachers. The next section suggests options for achieving this portability.

Part IV: Policy Solutions

The argument of this report is not that we should do away with school districts, which offer several useful and important functions for the American education system. Rather, we want to alter the way this schooling system functions, in order to maximize the benefits of the district-centric way of organizing schools and to minimize its downsides.

To show what this solution might look like—at least for students—consider Arizona, one of the most choice-rich states in the union. Arizona recognizes the need for policies within and without the traditional public school sector.

Arizona has led the nation in private school choice. The state has five private school choice programs, including four tax-credit scholarship programs that reward individuals and corporations that donate to organizations that grant scholarships to K–12 students, and an education savings account program that was recently expanded to allow any student in the state to participate.⁵⁸

Arizona has also led the nation in promoting charter schooling. More than 230,000 students attend more than 550 charter schools in Arizona, and it is the birthplace of several popular charter school networks, such as BASIS and Great Hearts.⁵⁹ It has the largest market share for charter schools of any state in the union (excluding Washington, D.C.).

But its success isn’t only outside the traditional public school system. Arizona is leading the nation in promoting choice within the traditional public school system as well. Students are free to enroll in any school district that they wish, even if they do not live within the district’s boundaries.⁶⁰ Districts are required to educate all the students within their borders, but they are also required to create an open enrollment plan for any schools, grades, or programs that have excess capacity. Schools must be transparent about their capacity and post on their website what grades and programs have available space. Students interested in applying to a grade or program that is full must be placed on a waiting list that has an equitable selection process (like a lottery). Districts are not required to provide transportation. While schools cannot deny students based on academic performance, they do have some ability to restrict enrollment based on a student’s disciplinary record (they do not have to enroll a student who has been expelled from another school, for instance). Arizona does not provide much information on how many students take advantage of this program statewide, but researchers looking at Arizona’s largest county, Maricopa, found that about 37% of students there were taking advantage of the open enrollment program in 2017.⁶¹

Arizona school districts are still free to operate as they wish, design schools the way that they want to, compensate teachers as they desire, and perform all the other functions of a typical school district.

What has this meant for Arizona homeowners? According to census data released in 2022, Arizona was home to five of the 15 fastest-growing cities in the nation last year—in a time when almost half the cities in the U.S. with a population greater than 50,000 lost population. Buckeye,

a city with fewer than 7,000 people in 2000, now has more than 100,000, and Maricopa County (where Phoenix is located) was the fastest-growing county in the nation.⁶² While we cannot attribute all this growth to changes in school policy, Arizona clearly is an in-demand place to live, which is beneficial for people who own homes there.

Unfortunately, we don't have a paradigmatic exemplar for more porous teacher policies.

Like the current residential-based assignment system of public schooling, many public-employee retirement systems favor some groups of teachers over others. Historically, pension plans have been designed to reward and prioritize teachers who remain teaching in a single system for a full career over teachers who move across or out of a system. Most states offer one type of plan, and most of those plans lack portability. Only a handful of states offer teachers the option to choose from different types of plans.

Ohio is a good example of a state that offers benefit choice for teachers (rather than simply a DB plan). Ohio teachers can choose to enroll in a final-salary DB plan, a hybrid plan, or a defined-contribution (DC) plan. This allows teachers to choose the plan that best meets their circumstances. Teachers who desire to work in Ohio public schools for their entire career have the option of choosing the DB plan, which is designed to reward long-termers. Some teachers, however, may be uncertain about working in Ohio public schools for a full career. Perhaps, at some time later in their career, they might want to move out of state to be nearer to family. Perhaps they are open to working in other educational sectors, such as in private schools. Perhaps they want to start their own school.⁶³ Whatever their circumstances, these teachers may be better served by enrolling in plans that provide greater portability, such as a hybrid plan or DC plan.

Offering several plans is not the only way to provide teachers with greater portability. Plan design matters more than plan type.⁶⁴ South Dakota is a good illustration: teachers hired on or after July 1, 2017, enroll in a hybrid plan.⁶⁵ Teachers who retire at normal or early retirement ages collect a pension benefit plus the balance of their personal Variable Retirement Account (VRA). Teachers who leave before reaching key career retirement ages, on the other hand, usually face the choice of receiving a refund benefit or receiving a deferred benefit in the future. Early leavers in South Dakota are likely to recoup more funds, compared with other early leavers in many other states. This is because South Dakota teachers who opt for a refund benefit have access to a portion of the employer contributions.⁶⁶ Early leavers in most other states can receive a refund of only their contributions. They cannot access any employer contributions.

South Dakota also provides a provision for deferred benefits not seen in many other state-sponsored teacher pension plans. Under the typical DB plan, deferred benefits are based on the final average salary (FAS) when the teacher left. The FAS amount remains frozen from the time of exit. Consequently, the effects of inflation decrease the value of a teacher's benefit the longer she is out of the system. South Dakota increases the FAS by a cost-of-living adjustment, therefore affording some protection against inflation. This measure allows retirement for early leavers to be on more solid footing, compared with other states.

Conclusion

A borderless K–12 education system—or, at least, a system that allowed for more flexibility for students, homeowners, and teachers—would present a mix of opportunities and challenges. Students would have more opportunities as to where to go to school and would no longer be stuck in schools that are lower quality, or just not the right fit, simply because they live in the school's catchment area. Teachers would have much more flexibility in where and for how long

they work, without worrying about losing valuable pension wealth by moving from system to system or into and out of the education sector. Homeowners would no longer have to worry about school quality as an element of their household value, a major element of household wealth in America.

At the same time, students, teachers, and homeowners would face challenges, and advocates of a less bordered system should be forthcoming about those challenges. Picking a school will become much more complicated. Rather than simply going to the nearby public school, students and their parents would need to research various school options, figure out how to get to and from the schools, and find out how to apply for admission. An administrative burden would be placed on the system as well, as school leaders try to figure out the fairest way to allocate seats in desirable schools. Teachers, too, would be giving up the stability of DB pensions, which, as we have freely admitted, are a great deal for teachers who teach in the same system for their entire career.⁶⁷ For approximately 80% of teachers, the math might work out to a worse deal. Finally, some houses that have capitalized the quality of local schools into their value would possibly lose value as a result of a more porous border into that school. This would most likely be offset by other homes gaining value, since they no longer carry the burden of lower-quality schools in their value; but for those people who have bought houses in order to be assigned to good schools, this could represent a hit to their wealth.

Life is about weighing costs and benefits. There would clearly be costs in moving to a K-12 system with fewer borders. Those costs would, however, be outweighed by the benefits that we have outlined here. In aggregate, a more borderless K-12 system would be better for students, teachers, and homeowners.

About the Authors



Martin F. Lueken

Fiscal Research and Education Center Director, EdChoice

Martin F. Lueken is director of EdChoice's Fiscal Research and Education Center (FREC), where he focuses on research and analysis of issues that pertain to school choice bills, current programs, and school funding. He has provided expert testimony and advice about fiscal issues for numerous states that have introduced education choice legislation. Lueken's work has been cited in various media and education-specific outlets, including the New York Times, the Wall Street Journal, Education Next, Education Week, and The 74.



Michael Q. McShane

National Research Director, EdChoice

Michael Q. McShane is director of national research at EdChoice. He is the author, coauthor, editor, or coeditor of 11 books on education. His analyses and commentary have been published widely in the media, including in the Wall Street Journal, National Affairs, USA Today, and the Washington Post. McShane has been featured in education-specific outlets such as Teachers College Commentary, Education Week, Phi Delta Kappan, and Education Next. In addition to authoring numerous white papers, he has had academic work published in Education Finance and Policy and Journal of School Choice.

Endnotes

- ¹ “Ladue School District,” *St. Louis Post-Dispatch* School Guide.
- ² “Ritenour School District,” *St. Louis Post-Dispatch* School Guide.
- ³ “District Boundary Map,” Ladue Schools.
- ⁴ “Taking a Fence Down,” Society of G. K. Chesterton, Apr. 30, 2012.
- ⁵ “School Choice in America Dashboard,” EdChoice.
- ⁶ “The Year of School Choice,” *Wall Street Journal*, July 5, 2011.
- ⁷ Margaret Menge, “Indiana Expands School Voucher Program to Include Most Middle-Class Families,” *Center Square*, Apr. 23, 2021.
- ⁸ Dylan Peers McCoy, “Indiana House Budget Would Expand Vouchers, Limit Poverty Aid for Schools,” *Chalkbeat Indiana*, Feb. 11, 2021.
- ⁹ *Digest of Education Statistics*, “Table 214.10. Number of Public School Districts and Public and Private Elementary and Secondary Schools: Selected Years, 1869–70 through 2017–18,” National Center for Education Statistics (NCES); *Digest of Education Statistics*, “Table 201.10. Historical Summary of Public Elementary and Secondary School Statistics: Selected Years, 1869–70 through 2016–17,” NCES.
- ¹⁰ Raj Chetty and Nathaniel Hendren, “The Impacts of Neighborhoods on Intergenerational Mobility II: County-Level Estimates,” *Quarterly Journal of Economics* 133, no. 3 (2018): 1163–228.
- ¹¹ Analyzing a sample of 5,743 public school districts, Bellwether applied a relative measure that compares the proportion of a district’s housing units that are affordable rental units with the share of families living in poverty within a district. They identified 1,400 public school districts that have inaccessible housing and 1,545 districts with concentrated low-income housing. Nearly 13 million students enroll in districts with concentrated low-income housing, more than double the number of students enrolled in districts with inaccessible housing. Districts with inaccessible housing have a median household income of \$108,000, compared with a median household income of \$55,000 in districts with concentrated low-income housing. These inaccessible districts also have a much lower poverty rate than their counterparts (7%, compared with 18%). Average per-pupil funding for public schools in inaccessible housing districts is \$22,575, compared with \$16,220 for districts with concentrated low-income housing. About 33% of these school districts with inaccessible housing share a border with districts with concentrations of low-income housing. See Alex Spurrier, Sara Hodges, and Jennifer O’Neal Schiess, “Priced Out of Public Schools: District Lines, Housing Access, and Inequitable Educational Options,” Bellwether Education Partners, October 2021.
- ¹² “1933: The New Deal and the Home Owners’ Loan Corporation (HOLC),” *Baltimore Story* (blog).

- ¹³ Tomás Monarrez and Carina Chien, “Dividing Lines: Racially Unequal School Boundaries in US Public School Systems,” Urban Institute, Sept. 1, 2021.
- ¹⁴ Charles Clotfelter measured segregation in public schools for metropolitan areas and documented that most of the observed segregation occurred between districts rather than within districts. See Charles T. Clotfelter, “Public School Segregation in Metropolitan Areas,” *Land Economics* 75, no. 4 (November 1999): 487–504.
- ¹⁵ Miguel Urquiola, “Does School Choice Lead to Sorting? Evidence from Tiebout Variation,” *American Economic Review* 95, no. 4 (September 2005): 1310–26.
- ¹⁶ E.g., Katherine Magnuson, Dan T. Rosenbaum, and Jane Waldfogel, “Inequality and Black-White Achievement Trends in the NAEP,” in *Steady Gains and Stalled Progress: Inequality and the Black-White Test-Score Gap*, ed. K. Magnuson and J. Waldfogel (New York: Russell Sage Foundation, 2008); M. Phillips, J. Crouse, and J. Ralph, “Does the Black-White Test Score Gap Widen After Children Enter School?” in *The Black-White Test Score Gap*, ed. Christopher Jencks and Meredith Phillips (Washington, D.C.: Brookings Institution Press, 1998); David W. Grissmer et al., “Student Achievement and the Changing American Family,” RAND Corp., Institute for Education and Training, 1994.
- ¹⁷ For a summary of these findings, see M. Danish Shakeel and Paul E. Peterson, “A Half Century of Progress in US Student Achievement: Agency and Flynn Effects, Ethnic and SES Differences,” *Educational Psychology Review* 34 (2022): table 9.
- ¹⁸ S. F. Reardon, “The Widening Academic Achievement Gap Between the Rich and the Poor: New Evidence and Possible Explanations,” in *Whither Opportunity? Rising Inequality, Schools, and Children’s Life Chances*, ed. G. J. Duncan and R. J. Murnane (New York: Russell Sage Foundation, 2014).
- ¹⁹ Shakeel and Peterson, “A Half Century of Progress in US Student Achievement.”
- ²⁰ Eric A. Hanushek, “Is Location Fate? Distributional Aspects of Schooling,” in *Education, Land, and Location*, ed. Gregory K. Ingram and Daphne A. Kenyon (Cambridge, MA: Lincoln Institute of Land Policy, 2014), 25–61.
- ²¹ Martha J. Bailey and Susan M. Dynarski, “Gains and Gaps: Changing Inequality in U.S. College Entry and Completion,” National Bureau of Economic Research, working paper 17633.
- ²² Wallace E. Oates, “The Many Faces of the Tiebout Model,” in *The Tiebout Model at Fifty: Essays in Public Economics in Honor of Wallace Oates*, ed. William A. Fischel (Cambridge, MA: Lincoln Institute of Land Policy, 2006).
- ²³ *Digest of Education Statistics*, “Table 216.20. Number and Enrollment of Public Elementary and Secondary Schools, by School Level, Type, and Charter and Magnet Status: Selected Years, 1990–91 through 2014–15,” NCES.
- ²⁴ Emily Files, “The History and Impact of Wisconsin’s Only School Integration Program,” WUWM 89.7 FM, Feb. 18, 2019.
- ²⁵ Anne Ryman, “20 Years of School Choice: How Arizona Has Evolved,” *Republic*, Oct. 30, 2015.

- ²⁶ Michael Q. McShane and Michael Shaw, “Transporting School Choice Students,” EdChoice, March 2020.
- ²⁷ Research on the capitalization of school quality into housing values is well developed. Nguyen-Hoang and Yinger surveyed research on the extent to which school quality is capitalized in housing values. Studies using different data and different research methodologies tend to find that a one-standard-deviation increase in test scores leads to an increase in house prices by up to 4%. See Phuong Nguyen-Hoang and John Yinger, “The Capitalization of School Quality into House Values: A Review,” *Journal of Housing Economics* 20, no. 1 (March 2011): 30–48.
- ²⁸ During the latter half of the 20th century, disparities in resources led to a spate of school finance reforms aimed at equalizing school quality by equalizing resources. These reforms in the 1970s and 1980s were successful in equalizing resources across schools but were less successful at equalizing school quality, for at least two reasons. First, equalizing resources does not necessarily translate into equalizing school quality, unless those resources lead to equalizing other inputs such as teacher quality and peer quality. Second, these reforms did not alter the system of residential-based assignment and therefore did not break the link between school quality and housing markets. See Eric J. Brunner, “School Quality, School Choice and Residential Mobility,” in *Education, Land, and Location*, ed. Ingram and Kenyon.
- ²⁹ Ke Wang, Amy Rathbun, and Lauren Musu, “School Choice in the United States: 2019,” NCES, September 2019.
- ³⁰ *Digest of Education Statistics*, “Table 206.40,” NCES.
- ³¹ Charles M. Tiebout, “A Pure Theory of Local Expenditures,” *Journal of Political Economy* 64, no. 5 (October 1956).
- ³² Wallace E. Oates, “The Effects of Property Taxes and Local Public Spending on Property Values: An Empirical Study of Tax Capitalization and the Tiebout Hypothesis,” *Journal of Political Economy* 77, no. 6 (1969).
- ³³ Researchers have subsequently studied the empirical effects of choice policies, which we discuss later in this report.
- ³⁴ Brunner, “School Quality, School Choice and Residential Mobility.”
- ³⁵ John Merrifield et al., “The Property Value Effects of Universal Tuition Vouchers,” *Journal of Housing Research* 20, no. 2 (2011): 225–38.
- ³⁶ Susanne E. Cannon, Bartley R. Danielsen, and David M. Harrison, “School Vouchers and Home Prices: Premiums in School Districts Lacking Public Schools,” *Journal of Housing Research* 24, no. 1 (2015): 1–20.
- ³⁷ Christian Buerger, “The Impact of Charter Schools on Housing Values,” working paper (January 2016).
- ³⁸ Margaret Brehm, Scott A. Imberman, and Michael Naretta, “Capitalization of Charter Schools into Residential Property Values,” *Education Finance and Policy* 12, no. 1 (2017): 1–27.

- ³⁹ Elena Andreyeva and Carlianne Patrick, “Paying for Priority in School Choice: Capitalization Effects of Charter School Admission Zones,” *Journal of Urban Economics* 100, no. 1 (July 2017): 19–32.
- ⁴⁰ Randall Reback, “House Prices and the Provision of Local Public Services: Capitalization Under School Choice Programs,” *Journal of Urban Economics* 57, no. 2 (March 2005): 275–301.
- ⁴¹ Michael L. Walden, “Magnet Schools and the Differential Impact of School Quality on Residential Property Values,” *Journal of Real Estate Research* 5, no. 2 (Summer 1990): 221–30.
- ⁴² Eric J. Brunner, Sung-Woo Cho, and Randall Reback, “Mobility, Housing Markets, and Schools: Estimating the Effects of Inter-District Choice Programs,” *Journal of Public Economics* 96, nos. 7–8 (August 2012).
- ⁴³ Francis A. Pearman, II and Walker A. Swain, “School Choice, Gentrification, and the Variable Significance of Racial Stratification in Urban Neighborhoods,” *Sociology of Education* 90, no. 3 (2017): 213–35.
- ⁴⁴ Daniel Aaronson, “The Effect of School Finance Reform on Population Heterogeneity,” *National Tax Journal* 52, no. 1 (March 1999): 5–30; Thomas Nechyba, “Introducing School Choice into Multidistrict Public School Systems,” in *The Economics of School Choice*, ed. Caroline M. Hoxby (Chicago: University of Chicago Press, 2003); Dennis Epple and Maria Ferreyra, “School Finance Reform: Assessing General Equilibrium Effects,” *Journal of Public Economics* 92, nos. 5–6 (June 2008): 1326–51; Rajashri Chakrabarti and Joydeep Roy, “Housing Markets and Residential Segregation: Impacts of the Michigan School Finance Reform on Inter- and Intra-District Sorting,” *Journal of Public Economics* 122, no. 1 (February 2015): 110–32; Eric Hanushek and Kuzey Yilmaz, “Schools and Location: Tiebout, Alonso, and Governmental Finance Policy,” *Journal of Public Economic Theory* 15, no. 6 (May 3, 2013): 829–55.
- ⁴⁵ Other important factors include peers and teacher quality.
- ⁴⁶ Brunner, “School Quality, School Choice and Residential Mobility.”
- ⁴⁷ “The 123s of School Choice,” EdChoice, Apr. 15, 2020.
- ⁴⁸ Working under a single retirement system usually implies working in public school systems within a single state, although some municipalities have their own retirement systems that cover public school teachers working within that city’s school district(s). For example, Missouri public school teachers working in St. Louis (city) and Kansas City public school districts enroll in their respective city’s retirement plan, while those working outside those districts are members of the state-sponsored retirement system.
- ⁴⁹ Full details about the report’s methodology and scoring rubric can be found in Anthony Randazzo and Jonathan Moody, “The National Landscape of State Retirement Benefits: How Good Are Public Retirement Systems at Putting Employees on a Path to Retirement Income Security?” Equable Institute, 2021.
- ⁵⁰ Robert M. Costrell and Michael Podgursky, “Peaks, Cliffs, and Valleys: The Peculiar Incentives in Teacher Retirement Systems and Their Consequences for School Staffing,” *Education Finance and Policy* 4, no. 2 (Spring 2009).

- ⁵¹ Robert M. Costrell and Michael Podgursky, “Distribution of Benefits in Teacher Retirement Systems and Their Implications for Mobility,” *Education Finance and Policy* 5, no. 4 (Fall 2010).
- ⁵² Ibid. The calculations are based on a 25-year-old entrant who works the first 15 years in another, similar teaching job under a different system.
- ⁵³ Ibid.
- ⁵⁴ Martin Lueken, “(No) Money in the Bank: Which Retirement Systems Penalize New Teachers?” Thomas B. Fordham Institute, Jan. 26, 2017.
- ⁵⁵ A representative teacher is a female teacher who begins work in the retirement system at age 25 and remains in that system.
- ⁵⁶ Josh McGee estimates that 72% of teachers will leave before 20 years of service. See Josh B. McGee, “Defined Contribution Pensions Are Effective,” Manhattan Institute Civic Report, no. 100 (August 2015).
- ⁵⁷ Cory Koedel et al., “Pension-Induced Rigidities in the Labor Market for School Leaders,” National Center for the Analysis of Longitudinal Data in Education Research, working paper 67 (January 2012).
- ⁵⁸ “School Choice in Arizona,” EdChoice.
- ⁵⁹ “Governor Ducey Signs Most Expansive School Choice Legislation in Recent Memory,” Office of the Governor Doug Ducey, July 7, 2022.
- ⁶⁰ “Enrollment Guidance,” Arizona State Board of Education, Dec. 13, 2021.
- ⁶¹ Kelly Powell and Ildi Laczko-Kerr, “Are Districts Making Attendance Zones Obsolete?” Arizona Charter Schools Association, Nov. 2, 2017.
- ⁶² Daisy Gonzalez-Perez, “Arizona Cities Continued Booming Growth Last Year, Census Bureau Says,” *Cronkite News*, May 27, 2022.
- ⁶³ Ronda Dry et al., “Leaving a Classroom but Starting a School: ‘How Can I Stay in It but Not Stay in It?’ ” Step Up for Students and EdChoice, 2022.
- ⁶⁴ While this principle is true for portability, there are other factors, such as funding, where plan type plays a key role. Notably, benefits under DB plans are not directly linked to contributions, and many of these plans have accrued significant unfunded liabilities over time. Because benefits under DC plans are based solely on contributions and investment earnings, some experts view DC and hybrid plans as better for controlling costs.
- ⁶⁵ Retirement benefits under a hybrid plan are based partly on a final-salary DB formula and partly on a retirement account (also known as the Variable Retirement Account, or VRA), which accumulates earnings from investments. Teachers hired before July 1, 2017, are enrolled in the system’s DB plan. This plan shares some of the same measures for portability as the hybrid plan (i.e., access to employer contributions for refunds and growing final average salary by cost-of-living adjustment for deferred benefits)—measures that are absent in many other state DB plans.

- ⁶⁶ Teachers who leave after one or two years in the system collect not only their own contributions; they receive 50% of their employer contributions as well. However, they must forfeit all funds in their VRA. Teachers who leave with at least three years of service are entitled to 85% of their employer contributions, in addition to their own contributions and VRA funds.
- ⁶⁷ Chad Aldeman and Andrew J. Rotherham, “Friends Without Benefits: How States Systematically Shortchange Teachers’ Retirement and Threaten Their Retirement Security,” Bellwether Education Partners (2014).