PURSUING INNOVATION

How Can Educational Choice Transform K–12 Education in the U.S.?

Patrick J. **Wolf**, Ph.D.
and Anna J. **Egalite**, Ph.D.

APRIL **2016**

Friedman Foundation | *For Educational Choice*

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Executive Summary

This report summarizes the state of competition in American K–12 education. It pays particular attention to the prevalence and market penetration of charter schools, private school vouchers, and tax-credit scholarships as market reforms. The effect of added institutional competition from charters, vouchers, and tax-credit scholarships on the performance of district schools and education funding is examined using a survey of the high-quality research on that topic. These summaries and analyses suggest that growing educational competition from charter schools, vouchers, and tax-credit scholarship programs holds the promise of improving the productivity of district schools, subject to the effective design of school choice policies.

Seven research questions are addressed:

1. **What is the general state of K–12 education in the U.S. as of 2012–13?** National Assessment of Educational Progress (NAEP) results for high school students are stagnant, with only a slight increase in the past few years, in spite of a massive infusion of new money into public education. Particularly concerning are the persistent achievement gaps between white and minority students.

2. **How much organizational competition exists in K–12 education, and what distinctive forms does it take?** Organizational competition takes a variety of forms in America, including "school choice by mortgage;" fee-paying private schooling; choice within public school districts; choice across public school districts; charter schools; and private school choice mechanisms, such as voucher and tax-credit scholarship programs; and education savings accounts (ESAs).

3. **Is overall competition in K–12 education increasing and, if so, at what rate?** School choice in the form of fee-paying private schooling is on the decline, but all other forms of school choice are increasing. Charter schooling and taxpayer-funded privateschool choice opportunities are increasing at the fastest rate of all the school choice options.

4. **Which forms of organizational competition are most likely to generate pressures for K–12 educational improvement and why?** Charter schooling, voucher programs, tax-credit scholarship programs, and ESAs hold the greatest prospect to induce competition and innovation into K–12 education. Students and dollars actually leave local public school systems (sometimes with delays and accommodations) when parents choose those alternatives to neighborhood public schools, and the greater autonomy afforded to charters, private schools, and other providers creates more fruitful opportunities for innovation. Fee-paying private schooling, on the other hand, is limited in the amount of competition it drives because tuition is family-financed.

5. **What are the intermediate effects of organizational competition on educational outcomes?** In the short term, district schools tend to take only modest steps to better sell their existing program to parents when they are faced with institutional competition. That is because public schools tend to be "closed systems" that are not used to being pressured to change and have limited flexibility and autonomy to respond in other ways. Thus, K–12 education will become more innovative primarily by launching new schools and new types of schooling.

6. **What are the effects of organizational competition on education productivity?** Thirty of the 42 evaluations of the effects of school-choice competition on the performance of affected public schools report that the test scores of all or some public school students increase when schools are faced with competition. Improvement in the performance of district schools appear to be especially large when competition spikes but,

otherwise, is quite modest in scale.

7. **What policy design elements appear to maximize the efficacy and productivity of competition-based education reforms?** The authors provide specific recommendations for policymakers in three general areas:

   a) Encourage innovative and thematically diverse schools.

      - School choice legislation written today needs to be flexible and thoughtful enough to facilitate new models of schooling that have not been widely implemented yet, especially those that rely on technology to leverage learning.

      - Support the complementary institutions that go hand-in-hand with the provision of K–12 education, like teacher training programs designed to prepare individuals to work in results-oriented schools that operate in competitive marketplaces.

      - Support principal education programs that are designed to teach those distinct skills that are necessary for a school leader to be successful in a choice environment.

      - Support the development of a technical assistance lab that would be charged with creating and disseminating technical knowledge for school leaders. This lab could support the development and rigorous evaluation of solutions to persistent problems that inhibit the efficient and effective delivery of education.

      - Offer innovation grants for schools willing to open in challenging communities with a history of significant dysfunction and deeply embedded social problems.

   b) Spread what works, and help great schools to scale up.

      - Tap social finance models such as social impact bonds, innovation funds, and impact investing to encourage the multiplication of highly effective schools.

   c) Contain the urge to over-regulate.

      - Private schools should be allowed to maintain a reasonable degree of autonomy overinstructional practices, pedagogy, and general day-to-day operations.

      - Beyond a background check, school leaders should be the ones determining teacher qualifications in line with their mission.

Educational competition is having a positive effect on public schooling in the U.S. Given improvements in the design and scope of that competition, the future benefits to be realized could be quite impressive.

Overview

The first section of this report describes the general state of competition in education and trends towards increasing competition over the past decade. The second section explains why independent charter schools and taxpayer-funded private school choice programs are especially important instruments for increasing competition in American education. The intermediate effects of education competition on incentives to seek efficiencies, innovation, and the quality of school supply are the topic of the third section. The fourth section examines the effects of organizational competition from specific charter school and taxpayer-funded private school choice programs on student outcomes in district schools. The effect of school choice competition on public school finance is the subject of the fifth section. The sixth section focuses on emerging evidence regarding best-practices design elements for school choice policies, and the seventh section concludes.[1]

The General State of K–12 Education in the U.S.

Real, inflation-adjusted spending in the U.S. on K–12 education has increased almost 300 percent since 1971. What has the country gained from such a massive investment in public education?

Over the past 30 years, student test scores in reading and math on the National Assessment of Education Progress (NAEP), "the nation's report card," have improved only modestly, and then only very recently (see Figure 1). Any gains that have been observed over the past three decades are concentrated among 9- and 13-year-olds. Meanwhile, 17-year-olds, who are nearer to the end of the knowledge production process, have gained very little (a 2 point increase in scores between 1978 and 2012).

This pattern is confirmed by data from the Programme for International Student Assessment (PISA), a test of 15-year-olds in 65 nations and education systems. The U.S. scores below the average for similar industrialized economies and has made virtually no gains since 2003. Meanwhile, national high school graduation rates only recently surged to approximately 80 percent, after hovering around 70 percent since the mid-2000s. In 1971, our K–12 public school system was producing mediocre results at a modest cost to society. Now, more than 30 years later, it is producing only slightly better results at three times the expense.[2]

Stanford economist, Caroline Hoxby, has calculated the number of NAEP points per $1,000 of real education spending in the U.S. from 1970–71 through 1998–99. Her careful calculations confirm that productivity in U.S. K–12 education declined by between 54 and 73 percent across those 20 years. Updating those figures to reflect current data, we observe that those trends have continued. Productivity in 1970–71 was between 80 and 110 percent higher than productivity in 2011–12, the most recent year for which data are available (see Table 1). We also calculate what NAEP scores would have been in 2011–12 if schools were operating at 1970–71 productivity (1972–73 productivity, in the case of math). In both subjects for 13- and 17-year-olds, student performance would be so advanced that the average American student would run into a test "ceiling effect," by outperforming the maximum scale score of 500 points.[3]

The particularly steep drop in education productivity for 17-year-olds is especially disconcerting, since their performance represents the end of the K–12 production process. In the 16 years since the turn of the millenium, real K–12 education spending has continued to increase at a rate higher than the slight increase in math NAEP scores during that period. And although the rate of productivity decline in K–12 education has slowed since the turn of the 21st century, it still is headed in the wrong direction.

Standard economic theory holds that, with some exceptions, competition between firms tends to increase productivity. Monopolists and near-monopolists are able to secure "monopoly rents" by charging prices well above marginal cost for goods of uneven or even low quality. Because customers

cannot obtain the service from anyone besides the monopolist, they have no choice but to pay the high price and accept the given level of service quality or go without.

Education is mandatory in the U.S. until a child is 16, so going without that service is not an option. Because public education is funded by third parties, in the form of taxpayers, an education monopoly can charge essentially as much as taxpayers are willing to pay.[4]

Organizational competition thus holds the greatest prospect for improving educational productivity in the U.S. by affecting incentive structures to improve the efficiency of existing institutions, by encouraging innovation, and by rewarding efficient organizations

FIGURE 1a NAEP Trends in Reading Progress, 1971–2012

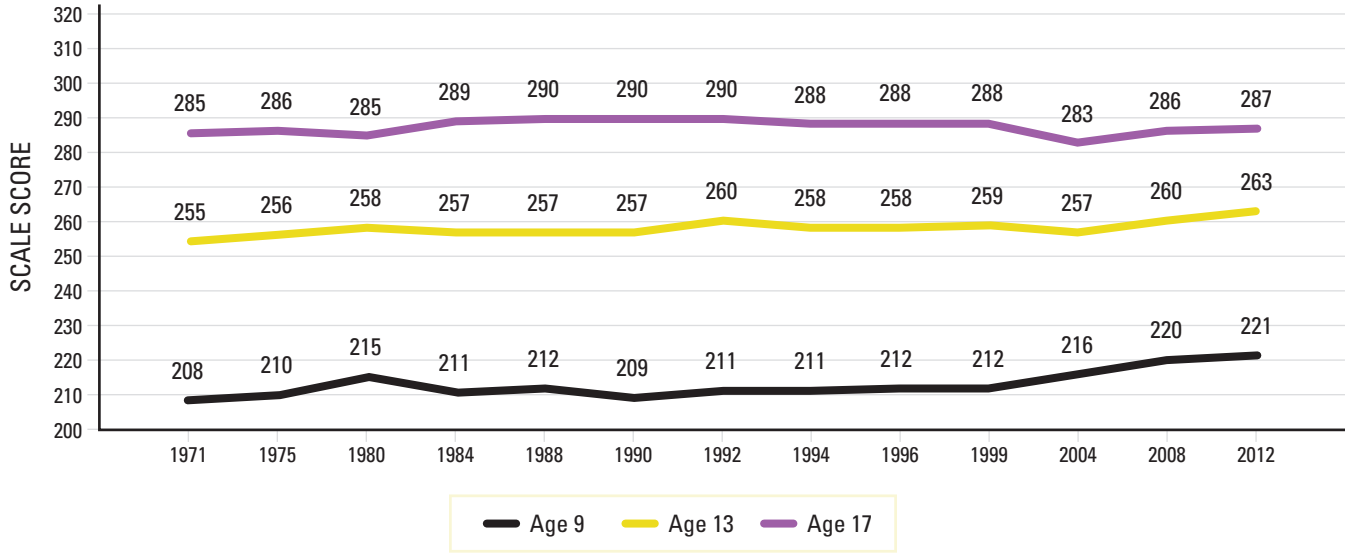
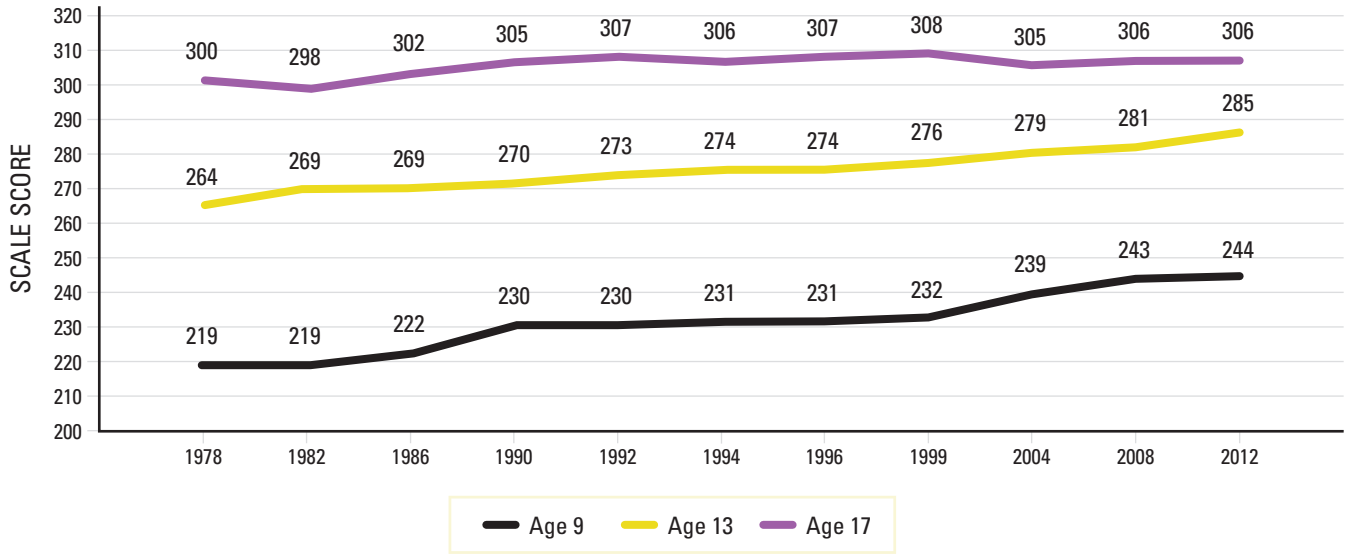


FIGURE 1b NAEP Trends in Math Progress, 1971–2012



Notes: Graph uses long-term trend NAEP data, which is preferable to the main NAEP data in this context because of continuity of assessment content over time, which permits comparison of results from different time periods.

Source: "Long-Term Trend NAEP Data Explorer," US Dept. of Education, Institute of Education Sciences, National Center for Education Statistics, accessed Mar. 30 2016, http://nces.ed.gov/nationsreportcard/lttdata.

TABLE 1 Decline in Education Productivity in the U.S. from 1970–71 to 2011–12

		9-Year-Olds				13-Year-Olds				17-Year-Olds			
		Reading		Math		Reading		Math		Reading		Math	
School Year	PPE	School Score	P	School Score	P	School Score	P	School Score	P	School Score	P	School Score	P
1970–71	$6,207	208	33.4			255	41.1			285	45.9		
1972–73	$6,645			219	33.0			266	40.0			304	45.7
1974–75	$7,008	210	30.0			256	36.5			286	40.8		
1977–78	$7,512			219	29.1			264	35.2			300	40.0
1979–80	$7,538	215	28.5			259	34.3			286	37.9		
1981–82	$7,424			219	29.5			269	36.2			299	40.2
1983–84	$8,013	211	26.3			257	32.1			289	36.0		
1985–86	$8,680			222				269				302	
1987–88	$9,440	212	22.4			258	27.3			290	30.7		
1989–90	$10,265	209	20.4	230	22.4	257	25.0	270	26.3	290	28.3	305	29.7
1991–92	$10,323	211	20.4	230	22.2	260	25.2	273	26.5	290	28.1	307	29.7
1993–94	$10,428	211	20.2	231	22.2	258	24.7	274	26.3	288	27.6	306	29.4
1995–96	$10,584	213	20.1	231	21.8	258	24.4	274	25.9	288	27.2	307	29.0
1998–99	$11,589	212	18.3	232	20.0	259	22.4	276	23.8	288	24.8	308	26.6
2003–04	$13,015	216	16.6	239	18.4	257	19.7	279	21.4	283	21.7	305	23.4
2007–08	$14,161	220	15.5	243	17.2	260	18.4	281	19.8	286	20.2	306	21.6
2011–12	$13,210	221	16.7	244	18.5	263	19.9	285	21.6	287	21.7	306	23.2
Productivity comparison (%) to earliest year shown			**1.0**		**0.8**		**1.1**		**0.9**		**1.1**		**1.0**
Actual mean NAEP score (2011–12)		221		244		263		285		287		306	
Predicted mean NAEP score (2011–12) at productivity of earliest year shown		442		435		543		529		607		604	

Notes: P stands for "Productivity," which is defined as NAEP points per thousand dollars of per-pupil spending. PPE stands for Per Pupil Expenditures, which are calculated as total expenditures per pupil in average daily attendance, adjusted into constant 2013-14 dollars using the Consumer Price Index. This table is an update to earlier work by Caroline M. Hoxby, "School Choice and School Productivity: Could School Choice Be a Tide that Lifts All Boats," in *The Economics of School Choice*, ed. Caroline M. Hoxby (Chicago: Univ. of Chicago Press, 2003), http://www.nber.org/chapters/c10091.pdf.

Sources: Thomas D. Snyder and Sally A. Dillow, *Digest of Education Statistics 2013*, NCES 2015-011 (Washington, DC: US Dept. of Education, National Center for Education Statistics, 2015), p. 367, table 236.55, http://nces.ed.gov/pubs2015/2015011.pdf; "Long-Term Trend NAEP Data Explorer," US Dept. of Education, Institute of Education Sciences, National Center for Education Statistics, accessed Mar. 30, 2016, http://nces.ed.gov/nationsreportcard/lttdata; Jay R. Campbell, Catherine M. Hombo, and John Mazzeo, *NAEP 1999 Trends in Academic Progress: Three Decades of Student Performance*, NCES 2000–469 (Washington, DC: US Dept. of Education, National Center for Education Statistics, 2000), https://nces.ed.gov/nationsreportcard/pdf/main1999/2000469.pdf

over time. Moving from a more monopolistic system to a more competitive structure for K–12 education in the U.S., in theory and based on practices in other service areas, should enhance educational productivity, especially in the long run.[5]

We say more monopolistic because the modern public education system in the U.S. is not and never really has been a pure monopoly. Customers can shop for schools by moving from one residential school zone to another, a process referred to as Tiebout choice or, more colloquially, "school choice by mortgage" or simply "residential school choice." Families can self-finance private schooling or even homeschool as alternatives to enrolling their children in the assigned neighborhood public school.[6]

These well-established sources of competition for local public school systems, however, require a substantial amount of resources from families. Research has established that families pay a premium on their mortgage to live in a suburban public school district that produces students with average test scores that are substantially higher than comparison districts. Private schools vary dramatically in their average annual tuition costs, from less than $3,000 for some religious private schools to more than $50,000 for the most elite college prep and residential private schools. Homeschooling comes at a substantial opportunity cost for families, as it removes a potential wage earner from the household's income ledger. For these reasons, access to traditional alternatives to assigned public schools has tracked closely with family wealth and income.[7]

Because the American households that typically have the potential to opt out of assigned public schools tend to share the characteristic of higher wealth, local public school systems can create pseudo-monopolies by serving as the exclusive educators of lower-wealth families. This phenomenon has been particularly pronounced in urban areas traditionally characterized by well-resourced public schools in the suburbs, expensive private schools in the inner city, and inner-city public school districts serving high proportions of low-income students and, by many indications, serving them badly.

To address this situation and seek to bring more intense competition to K–12 education in the U.S., especially in urban areas, policymakers have looked to educational alternatives such as charter schools, private school vouchers, tax-credit scholarships, and most recently, education savings accounts (ESAs).

The General State of Competition in K–12 Education

Local public schools and the districts that run them might plausibly experience competition from neighboring districts competing for residential school choosers, inter- and intra-district choice programs, charter schools, homeschools, and private schools. Private schools in particular might generate competition both through their fee-paying customers and through government support programs that subsidize student enrollment in private schools.

Over the past 25 years, and particularly since the dawn of the 21st century, those various alternatives to assigned neighborhood schools have become more common. Thus we can conclude that local public schools and school districts are experiencing somewhat more pressure from competing educational organizations than they have in the past.[8]

Residential School Choice

Residential school choice is a significant part of the school choice scene. A national survey in 2012 by the U.S. Department of Education's National Center for Education Statistics (NCES) found that 18 percent of parents of school-age children who attend public schools said that they moved to their current neighborhood specifically to gain access to the local school (see Table 2). Parents were relatively less likely to say that they exercised residential school choice if they were black, poor, had lower levels of educational attainment, or lived outside of an urban area.

Basically, both resources (income and education) and

opportunity (urban location) influence a family's willingness and ability to exercise residential school choice. While it is difficult to compare results from prior years because of changes in the sampling procedures over time, it is possible to compare trends within years. In all three of the most recent administrations of the National Household Education Surveys Program (NHES), fewer black, Hispanic, poor, and under-educated parents have reported a neighborhood move to ensure access to the right school for their children, relative to white, non-poor, and well-educated parents.

Thus, we know that almost one-fifth of public school parents exercised residential school choice in 2012, and we know that they tended to possess characteristics of family advantage.[9]

TABLE 2 Rate of Residential Choice for Students in grades 1–12, 2003, 2007, 2012

Type of School, Student, or Household Characteristic	% of Parents Reporting That They Moved to Their Current Neighborhood For Their Child's School		
	2003	2007	2012
Total	26	27	18
School type			
Public, assigned	28	28	20
Public, chosen	19	18	7
Race/ethnicity			
White	28	29	19
Black	19	18	16
Hispanic	27	25	17
Asian or Pacific Islander	34	36	26
Poverty Status			
Poor	22	21	15
Non-Poor	30	30	20
Parents' Education			
Less than high school	22	18	14
High school diploma or equivalent	24	21	14
Some college, including voc./ technical	24	25	18
Bachelor's Degree	28	31	23
Graduate/ professional degree	34	34	28
Community type			
City	n/a	23	16
Suburb	n/a	33	22
Town	n/a	20	15
Rural	n/a	23	17

Note: Pacific Islander includes Native Hawaiian, and Hispanic includes Latino. Poor students are defined as those with household incomes below 100 percent of the Federal Poverty Limit (FPL). In 2007, only parents of students in public schools were asked whether they moved to their current neighborhood for the child's school, therefore the analysis for all three years is limited to students in public schools to maintain comparability. The 2012 statistics were calculated from the public use data file released on May 6, 2015. While the 2003 and 2007 administrations of the survey were conducted via random digit dial samples of landline phones, the 2012 administration changed to a mail-in survey. Due to this change in the survey mode, readers should use caution when comparing 2012 estimates to prior NHES administrations.

Sources: Nancy Vaden-Kiernan and John McManus, *Parent and Family Involvement in Education: 2002-03,*NCES 2005-043 (Washington DC: US Dept. of Education, National Center for Education Statistics, 2005), http://nces.ed.gov/pubs2005/2005043.pdf; Kathleen Herrold and Kevin O'Donnell, *Parent and Family Involvement in Education, 2006–07 School Year, From the National Household Education Surveys Program of 2007,* NCES 2008-050 (Washington, DC: US Dept. of Education, National Center for Education Statistics, 2008), http://nces.ed.gov/pubs2008/2008050.pdf; Amber Noel, Patrick Stark, and Jeremy Redford, *Parent and Family Involvement in Education, from the National Household Education Surveys Program of 2012,* NCES 2013-028.REV (Washington, DC: US Dept. of Education, National Center for Education Statistics, 2015), http://nces.ed.gov/pubs2013/2013028rev.pdf.

Public School Choice

After residential school choice, the second-most common form of school choice is choice within the district school system. Public school choice takes a variety of forms, including "open enrollment" (i.e. intra-district choice), magnet schools, and even inter-district choice.

Public school choice shares common characteristics—the student must remain in a school in either the local district or a neighboring one, and the school choice process is subject to regulation by public school authorities. Through statutory provisions or school district discretion, the state plays a substantial role in deciding what kinds of students go to what kinds of schools under public school choice.

Public school choice is on the rise in the U.S., as nearly 8 million students representing 16 percent of K–12 enrollments exercised public school choice in 2011, the most recent year of data available, up from 6.5 million students representing 14 percent of enrollments around the turn of the millennium (see Figure 2).

Detailed data from the National Center for Education Statistics permit us to learn more about how public school choice is exercised. In 2015, for instance, 17 states had voluntary intra-district enrollment policies, which allow a student to transfer to another school within his or her school district. Meanwhile, 31 states had voluntary inter-district enrollment policies, which allow a student to transfer to a public school outside his or her home district. Further, an examination of student-level data for 2007–08 reveals that magnet schools and inter-district choice generated around 4.3 percent and 1.4 percent of all public school enrollments, respectively.[10]

Family-Financed Private Schooling

Family-financed private schooling is the only form of parental school choice that is on the decline in the U.S. Fee-paying private school students totaled 5.3 million in 2011, down from 6.3 million in 2001. In 2001, family-financed private school enrollments comprised 13 percent of all K–12 students, but the market share for such students is now down to just 11 percent (see Figure 2).[11]

Homeschooling

Homeschooling, which is a particular form of private schooling, recently dropped from the fourth-most to the fifth-most common form of school choice. Although estimates of the number of homeschooled students have increased from 850,000 or 1.8 percent of the K–12 population in 2001 to 1.75 million or 3.6 percent of all students in 2013, a mere doubling of the rate of homeschooling over a 12-year period was not enough to prevent homeschooling from being eclipsed by charter schooling as the fourth-most common alternative to assigned public schools.

Charter Schools

One reason why charter schools have grabbed a greater educational market share than homeschools is because virtual learning approaches have permitted some charter schools to serve as the delivery mechanism for homeschooling. A student who is learning at home through formal enrollment in a virtual charter school is classified as a charter school student and not a homeschool student.[12]

In fewer than 25 years, charter schools have become the fourth-leading alternative to district schools in the U.S. Charter schools are intended to embody a grand bargain of accountability for student outcomes in exchange for greater autonomy in operations. Because of their independence, charter schools are distinct from public school choice instruments that are directly regulated by traditional school districts, such as open enrollment and magnet schools. Charters now enroll more than 2.5 million students or 5.1 percent of the K–12 student population, up from about 450,000 students and 1 percent of the population in 2001.

Private School Choice

The seeds of the school voucher concept took much longer to germinate than did the seeds of charter schooling.

Pseudo school voucher programs, called "town tuitioning," were launched in Vermont and Maine in 1869 and 1873, respectively. Any students in those states living in a town without a public school serving their educational level (e.g. high school) have been eligible to attend a private school at government expense ever since.[13] In the 1990s, both states amended their town-tuitioning laws to exclude sectarian religious schools from the program, and some school choice researchers and advocates do not consider town-tuitioning to be a taxpayer-funded private school choice program because of those restrictions.[14]

Economist Milton Friedman formulated the first concrete policy proposal for school vouchers in 1955.[15] Friedman argued that government should be the funder of K–12 education but need not be its provider. He claimed that a universal system of school choice, funded through government vouchers, would provide a fairer, more effective, and more efficient education to school children.[16]

Political scientists John E. Chubb and Terry M. Moe followed in Friedman's wake with the 1990 book *Politics, Markets and America's Schools*, arguing that public school systems are unresponsive bureaucracies by nature and recommending private school vouchers as an alternative to the residential assignment of students to neighborhood public schools.[17]

The year 1990 proved to be a watershed for taxpayer-funded private school choice, as the first urban school voucher program in the U.S. was launched that fall as a small pilot program in Milwaukee, Wisconsin. It enrolled just 341 students in seven participating private schools (all of them secular, by law) but grew steadily, especially after religious schools were allowed to participate in 1998. The Milwaukee program currently enrolls over 26,000 students in 112 private schools.[18]

Private School Choice "Types"

- Vouchers give parents all or a portion of the public funding set aside for their children's education to choose private schools that best fit their learning needs. State funds typically expended by a school district are allocated to families in the form of a voucher to pay partial or full tuition at a private school, including religious and non-religious options.

- Tax-credit scholarships allow taxpayers to receive full or partial tax credits for donating to nonprofits that provide K–12 private school scholarships. Tax credits are capped at an amount determined by the legislature, which, in turn, affects the availability and size of scholarships.

- Education savings accounts (ESAs) allow parents to withdraw their children from public district or charter schools and receive a deposit of public funds into government-authorized savings accounts. Those funds can cover private school tuition and fees, online learning programs, private tutoring, educational therapies, college course costs, and other higher education expenses.

- Through individual tax credits and deductions, parents can receive state income tax relief for approved educational expenses, which can include private school tuition, books, supplies, computers, tutors, and transportation. Tax credits lower the total taxes a person owes; a deduction reduces a person's total taxable income.

Other urban voucher programs were established in Cleveland in 1996, the District of Columbia in 2004, New Orleans in 2008, and Racine, Wisconsin in 2011. Means-tested statewide programs were launched in Ohio in 2005, Louisiana in 2008, Indiana in 2011, North Carolina in 2013, and Wisconsin in 2013.[19] The Florida A-Plus Program launched in 1998, offering school

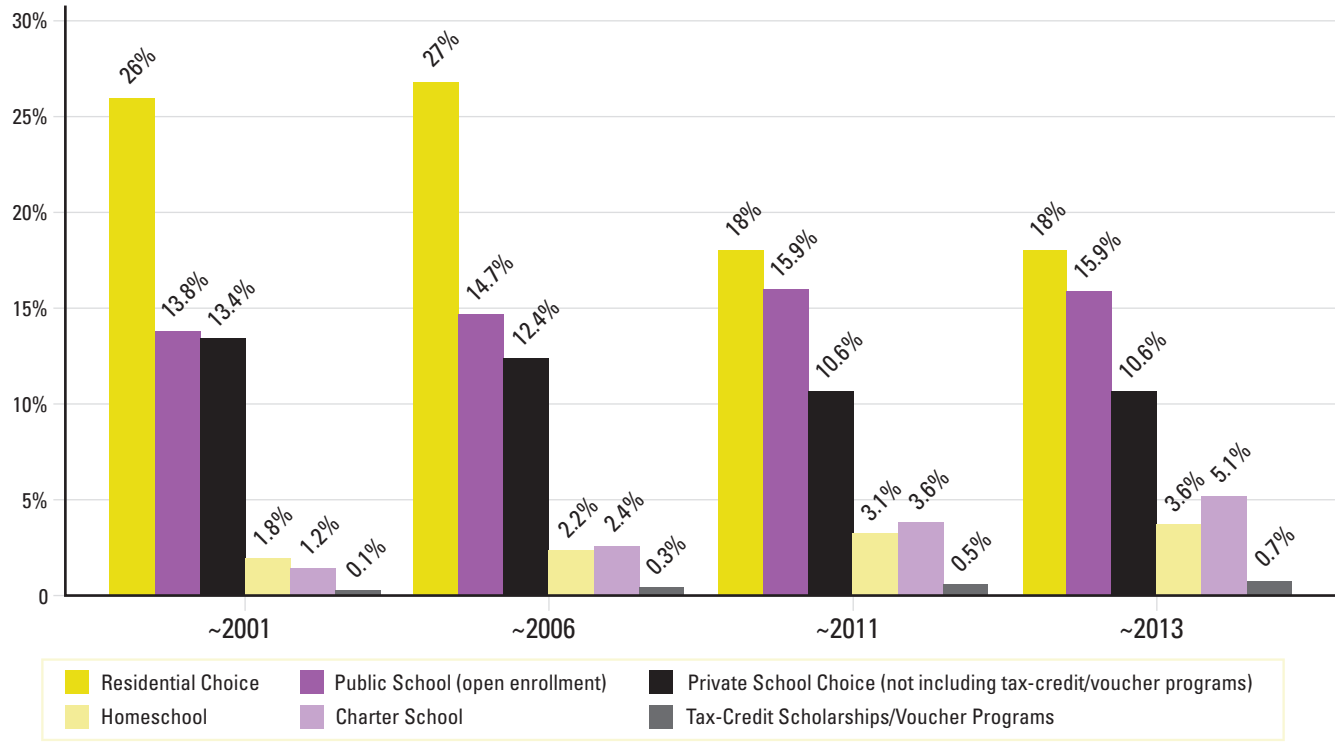
vouchers to students attending public schools that received two "failing" grades from the state during a four-year period, but the voucher component of the A-Plus program was declared unconstitutional by the Florida Supreme Court in 2006. Florida also launched a statewide school voucher program for students with disabilities in 1999 that grew to enroll almost 29,000 students in 2014.[20] Eight other states passed voucher programs targeted to students with general or specific disabilities between 1999 and 2012.[21]

In 1997, Arizona pioneered funding private school scholarships through state tax credits provided to individuals or corporations that donated to scholarship granting organizations, an approach that has been applied in thirteen other states 18 years later.

In 2011, Arizona also developed Empowerment Scholarship Accounts (a.k.a. education savings accounts, ESAs) as a highly flexible form of taxpayer-funded private school choice whereby the government deposits a portion of the funds that it otherwise would spend on a child's public education into a spending account that parents can use to purchase private school tuition, tutoring, course materials, or therapy for their child. Similar programs already have been established in Florida, Mississippi, Nevada, and Tennessee.[22]

By the spring of 2015, a total of 43 school voucher, tax-credit scholarship, and ESA programs enrolled more than 350,000 students, comprising just 0.7 percent of all K–12 enrollments. This was up dramatically from

FIGURE 2 Rate of Student Enrollments in Schools of Choice, 2001–2013



Notes: Data for each category were not always available for the exact years shown. Specifically, the data shown for "Residential Choice" are from 2003, 2007, and 2012; data for "Public School Choice" are from 1999, 2003, 2007, and 2011; data for "Private School Choice" are from 2001, 2005, 2011, and 2011; data for "Homeschool" are from 1999, 2003, 2007, and 2012; data for Charters are from 2001; 2006; 2010, and 2013; data for Tax-Credit Scholarship/ Voucher Programs are from 2001, 2006, 2011, and 2013.

Source: Author's Calculations; U.S. Department of Education, National Center for Education Statistics, *Trends in the Use of School Choice: 1993 to 2007*; U.S. Department of Education, National Center for Education Statistics, *The Digest of Education Statistics*, 2013; U.S. Department of Education, National Center for Education Statistics, Parent Survey of the 1999 National Household Education Surveys Program (NHES), U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education Survey of the 2003 and 2007 NHES; National Alliance for Public Charter Schools; Alliance for School Choice, *School Choice Yearbook*.

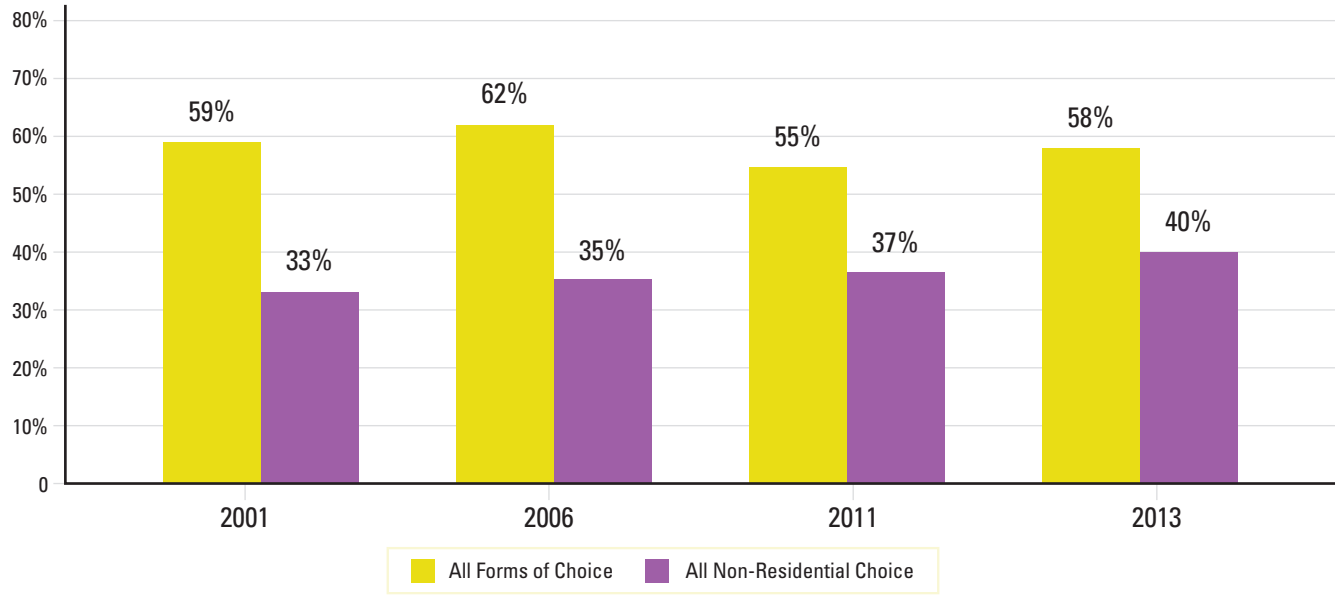
2001, when six such programs enrolled a mere 31,000 students.

The Wall Street Journal declared 2011 "The Year of School Choice," as six new voucher or tax-credit scholarship programs were enacted and 11 existing programs were statutorily expanded. That growth has continued through 2015, which witnessed the enactment of new taxpayer-funded private school choice programs in Arkansas, Mississippi, Montana, Nevada (2 programs), and Tennessee, as well as numerous expansions of existing programs. Though taxpayer-funded private school choice programs represent the smallest source of alternatives to assigned public schools in terms of current enrollments, they represent the most rapidly growing form of school choice in the U.S.[23]

We can get a sense of the overall degree of competition exerted on district schools by totaling all of these categories of school choice, including parents who selected their home deliberately to gain admission to a local school. Assuming that residential school choice was 26 percent in 2001, 27 percent in 2006, and 18 percent in 2011 and 2013 because we only have data for three time periods, we add the changing rates of school choice in the other categories to this base and approximately gauge the trend in choice-induced competition over time.

Based on such a calculation, 59 percent of student enrollments were by choice in 2001; 62 percent were chosen in 2006; 55 percent were by choice in 2011;

FIGURE 3 Proportion of K–12 Student Enrollments by Choice, 2001–2013



Sources: Authors' calculations; Nancy Vaden-Kiernan and John McManus, *Parent and Family Involvement in Education: 2002-03*,NCES 2005-043 (Washington DC: US Dept. of Education, National Center for Education Statistics, 2005), http://nces.ed.gov/pubs2005/2005043.pdf; Kathleen Herrold and Kevin O'Donnell, *Parent and Family Involvement in Education, 2006–07 School Year, From the National Household Education Surveys Program of 2007*, NCES 2008-050 (Washington, DC: US Dept. of Education, National Center for Education Statistics, 2008), http://nces.ed.gov/pubs2008/2008050.pdf; Amber Noel, Patrick Stark, and Jeremy Redford, *Parent and Family Involvement in Education, from the National Household Education Surveys Program of 2012*, NCES 2013-028.REV (Washington, DC: US Dept. of Education, National Center for Education Statistics, 2015), http://nces.ed.gov/pubs2013/2013028rev.pdf; Thomas D. Snyder and Sally A. Dillow, *Digest of Education Statistics 2013*, NCES 2015-011 (Washington, DC: US Dept. of Education, National Center for Education Statistics, 2015), http://nces.ed.gov/pubs2015/2015011.pdf; Stephen P. Broughman and Kathleen W. Pugh, *Characteristics of Private Schools in the United States: Results From the 2001–2002 Private School Universe Survey*, NCES 2005-305 (Washington, DC: US Dept. of Education, National Center for Education Statistics, 2004), http://nces.ed.gov/pubs2005/2005305.pdf; Broughman, Nancy L. Swaim, and Patrick W. Keaton, *Characteristics of Private Schools in the United States: Results From the 2005–2006 Private School Universe Survey*, NCES 2008-315 (Washington, DC: US Dept. of Education, National Center for Education Statistics, 2008), http://nces.ed.gov/pubs2008/2008315.pdf; Broughman and Swaim, *Characteristics of Private Schools in the United States: Results From the 2011–12 Private School Universe Survey*, NCES 2013-316 (Washington, DC: US Dept. of Education, National Center for Education Statistics, 2013), http://nces.ed.gov/pubs2013/2013316.pdf; National Alliance for Public Charter Schools Data Dashboard, accessed Mar. 31, 2016, http://www.publiccharters.org/dashboard/home; The Friedman Foundation for Educational Choice, *The ABCs of School Choice The Comprehensive Guide to Every Private School Choice Program in America*, 2016 ed. (Indianapolis: Friedman Foundation for Educational Choice, 2016), http://www.edchoice.org/wp-content/uploads/2016/02/2016-ABCs-WEB-2.pdf.

and 58 percent were chosen in 2013 (see Figure 3). In other words, the percentage of students in the U.S. who defaulted to an assigned public school has hovered around 41 percent from 2001 to 2013, but this overall statistic masks changes in the types of school choice exercised by students. When we exclude the rate of residential choice from these calculations, non-residential school choice has increased from 33 percent in 2001 to 35 percent in 2006, 37 percent in 2011, and 40 percent in 2013.

But are all potential sources of competitive pressure on local public schools equal?

Why Policymakers Should Focus on Charters and Taxpayer-Funded Private School Choice

All of the alternatives to traditional assigned public schools described above provide educational options to parents. Not all of them, however, are authentic rivals to local public school districts.

Most alternatives to assigned public schools do not offer strong competitive pressures of the kind that Friedman envisioned. For instance, intra-district and magnet schools within a single school district are not sources of competition because they are operated by the same provider. They are little different than the sports shoes and dress shoes units of a large department store.

The number of students that enroll in district schools of choice within a public school district, including magnet schools, has no effect whatsoever on the amount of funding the district receives. If anything, higher rates of intra-district choice bring more resources to a district due to state and federal categorical programs supporting school choice expenses, such as transportation and parent information. The affected school district has no incentive to better manage and operate its district schools under this scenario because the students and subsequent funding are not leaving the district. The movement of students through intra-district choice becomes merely an exercise in district accounting.[24]

Residential School Choice

Residential school choice has the potential to apply competitive pressure on local public school districts. In practice, however, there are many constraints on that pressure. The residential mobility of families with at least modest wealth and income can be sticky because they tend to have most of their wealth invested in their homes. Buying and selling homes and moving involve substantial transaction costs that families prefer not to pay unless they have to, for example due to a job transfer to another city.

Moreover, research suggests that students lose about one to two months of learning every time they switch schools, leaving parents legitimately wary about changing schools by changing houses within the same metropolitan area. Because the quality of public schools is a major parental concern when moving into an area and families typically do not move around to optimize the fit of their children to their assigned public schools once they are settled in an area, local public school districts can treat existing residents more or less as a captive audience. Residential school choice is unlikely to be a major source of competitive pressure on local public schools.[25]

Inter-District School Choice

Inter-district choice, like residential choice, is a potential source of organizational competition for local school districts that has disappointed in practice. Although 36 states permit voluntary inter-district choice, the number of public school districts in the U.S. has declined precipitously from 117,108 in 1940 to just 13,567 in 2012, reducing the options for inter-district choice and increasing its logistical challenges.

Transfers across public school districts represent just 1.4 percent of all K–12 student enrollments in the U.S. and comprise less than 10 percent of all cases of public

school choice. Schools in receiving districts are only required to accept students from sending districts if they admit to having excess capacity. This requirement is a limiting factor because the more effective schools in most districts also tend to be the most likely to be full or over-enrolled.

A relatively popular local school district could add capacity to receive more students from neighboring school districts through inter-district choice. Adding capacity to a school district is a long political and bureaucratic process, however, involving planning approvals, successful millage votes, and the completion of long construction projects. Thus, growing school district capacity to try to accommodate more inter-district school choice is substantially limited because it involves a great deal of political coordination, bureaucratic effort, and resources.[26]

Homeschooling

Although homeschooling is growing in popularity as an alternative to attending a district school, it is growing at a slower rate than it had been previously and also when compared to the growth rate of charter schools and voucher programs. This slowdown in growth is likely due to the high resource demands required of homeschooling families, which may act as a natural ceiling on the eventual number of homeschoolers and, therefore, temper any competitive pressure that homeschooling places on local public school districts.

Moreover, homeschooling families tend to be a variegated group of parents with strong and distinctive views on education, including both classical and liberal "un-schoolers," conservative religious families, "back-to-nature" environmentalists, parents of gifted students, parents of students with disabilities, and professional educators who wish to apply their expertise to the education of their own children. Local public school districts may not be especially eager to retain the students of such families in their system, because a broad diversity of educational philosophies and approaches can be very difficult to accommodate within a single educational organization. Thus, competition from homeschoolers probably is not keeping local public school superintendents up at night.

Choice from Charters and Private School Choice Programs

That leaves us with charter schools and taxpayer-funded private school choice programs as the best candidates for placing direct and meaningful competitive pressure on the schools within local public school districts. It is helpful to focus specifically on charters that are authorized by non-district authorizers, as these are truly independent, and their charter cannot be revoked by the district at any time. Charters, vouchers, tax-credit scholarships, and ESAs possess characteristics that legitimately threaten the organizational interests of local public schools.

First, under most circumstances, a portion of the government resources that would have gone to the local public school district are diverted to the charter school or private school choice program when a child switches into it. Often there is a one- or two-year lag before local public school districts take the financial hit from losing a student to charters or a private school choice program, but eventually the price must be paid.

Because local public school districts have a rational interest in retaining as much government money within their organization as they can, the immediate or eventual loss of student funding through charter, voucher, tax-credit scholarship, or ESA program transfers (or initial enrollments in such schools by kindergarteners) is a real threat to public school districts.[27]

Second, charter schools and taxpayer-funded private school choice programs are starting to shed many statutory arrangements that set artificial ceilings on their growth. That is reflected in changes to charter school legislation occurring at the state level. Fewer than half of states currently have a cap on the number of charter schools permitted; 27 states have laws that

provide charters with automatic exemptions from many state and district laws and regulations; and 35 states allow virtual charter schools.[28]

Not coincidentally, the number of charter schools grew from 4,440 in 2008–09 to 6,440, just five years later.[29] At the same time, seven of the 16 school voucher or tax-credit scholarship programs then in existence were expanded in 2014 by raising or eliminating enrollment caps, increasing appropriations, or expanding student eligibility.[30] Many local public school districts can no longer be assured that statutory provisions will limit the extent to which charters and taxpayer-funded private school choice programs compete for their students.

As artificial constraints on schools and enrollments in charters and private school choice programs are relaxed or eliminated, the number of students participating in such programs has expanded markedly. The third reason why charters and private school choice programs are the best candidates to place competitive pressure on traditional school districts is that such programs are increasing in popularity faster than other educational alternatives. Unlike homeschooling, the momentum behind charters and various types of private shool choice shows no sign of slackening. As one extreme example, in 2014 New Orleans became the first all-charter school system in the nation.[31]

Finally, charter schools and taxpayer-funded private school choice programs are more robust competitive threats to district schools than are other alternative school types because they tend to attract student populations that fit the district school client base. This is especially true in the urban areas across the country where charters and private school choice programs are concentrated.

More than 60 percent of the students served nationally by charter schools qualify for the federal free- and reduced-price lunch program, and half of the charter school population is of minority race or ethnicity, rates that are only modestly higher than the comparable percentages for all public school students.[32]

Private school choice programs also target students with special needs, a group that has traditionally been a district school constituency. More than 20 percent of the voucher, tax-credit scholarship, and ESA enrollments across the country are in programs targeted exclusively to students with disabilities. Thousands more students with disabilities participate in choice programs, like the Indiana Choice Scholarship Program, that are targeted to the general education population but have broad eligibility criteria that permit students with disabilities to enroll. Meanwhile, only 13 percent of all public school enrollments in the nation are students with disabilities.[33] Though fee-paying private school students and homeschoolers tend to possess student characteristics that distinguish them from district school students, charter schools and private school choice programs target the kinds of students that local public school districts expect to serve.

For these four reasons—money leaves, enrollment restrictions are lifted, enrollments continue to grow at an aggressive rate, and new choice programs target students that would otherwise attend district schools—charter schools and government-funded private school choice programs deserve close consideration as the possible sources of authentic competition with local public school districts.

The Intermediate Effects of Organizational Competition in Education

Economic theory holds that organizational competition changes outcomes through any of three immediate and related causal mechanisms: by encouraging existing institutions to work harder in response to behavioral incentives, by incentivizing innovation, and by dissolving inefficient organizations.[34]

Encouraging Existing Institutions to Work Harder

It is impossible to observe directly the extent to which competition in education from charter schools and private school choice programs affects behavioral incentives because we can't see intentions, only actions. We can consider, however, the extent to which competition is likely to affect the incentives of key actors in the education system based on the design features of charter and private school choice programs.

Competition affects behavior most when it brings with it the threat of losing something that is desired by the affected person. Local public school districts value the students they serve and the resources that flow to the organization because of those students. Therefore, we can surmise, based on the work of Terry Moe, that competition from school choice in the form of charters, vouchers, tax-credit scholarships, and ESAs will most clearly and positively affect behavioral incentives when the choices are extensive; the options are of high quality; and most, if not all, dollars travel with the student. Organizational competition in education is likely to be feckless, on the other hand, when the choices being provided to families are limited, generally of low quality, and hold public schools financially harmless. We would expect that any positive competitive effects of charters and private school choice programs would be much clearer under conditions that induce more intense educational competition than under conditions that induce more limited competition.[35]

Do educational organizations work harder and engage in more innovation when pressured by competition? Apparently, it depends.

Organizational ecology provides a useful source of insight, by applying norms and insights from the biological sciences to the study of human organizations. Research in organizational ecology draws a key distinction between "open" and "closed" systems. Open systems, such as individual organisms, are acted upon regularly by their environment and adapt themselves to environmental demands to survive and prosper. Closed systems, such as buildings, are only rarely acted upon by their environment (e.g. during an earthquake) and have little or no ability to adapt to conditions. Human organizations can be placed on a continuum regarding the extent to which they are relatively open or relatively closed systems.[36]

There are good reasons to think that local public school systems traditionally have been relatively closed organizational systems even though they have required regular doses of resources from their environment in the form of money, students, and employees. Arguably, local public school systems have been sufficiently successful at garnering enough of these organizational inputs that they can resist the need to adapt much to their outside environment.

Prior to the 21st century when school choice really caught fire, local public school districts could be confident that nearly all of the school-aged children within their geographic boundary would be required to attend one of their district schools. Increased appropriations for public schooling tended to be both popular and possible. To illustrate this point, Figure 4 graphs the growth in public school staff and corresponding growth in per-pupil expenditures, measured in constant 2012–13 dollars. Thus, teaching remained an attractive profession, especially for young women who planned to have both a family and a career. Assured of a steady supply of clients, funding, and workers, district schools could operate as systems closed to pressure from their environment to change.[37]

FIGURE 4 Growth in Total Public School Staff and Corresponding Growth in Per-Pupil Expenditures (PPE), 1990–2011

Sources: Thomas D. Snyder and Sally A. Dillow, *Digest of Education Statistics 2013*, NCES 2015-011 (Washington, DC: US Dept. of Education, National Center for Education Statistics, 2015), p. 152, table 213.10, http://nces.ed.gov/pubs2015/2015011.pdf; Ibid., p. 367, table 236.55.

Incentivizing Educational Innovation

Resident scholar and Director of Education Policy Studies at the American Enterprise Institute, Frederick Hess, argues in slightly different terms that, because of the sensitive political positions that local public school systems find themselves in, they tend to operate as highly conservative, closed organizational systems. Competition from schools of choice prior to 2000 operated like many "pickaxes," chipping away at inefficient and ineffective school operations incrementally, and not like "bulldozers," completely destroying the old and creating the opportunity for totally new and innovative local public schools. The result, as Hess puts it, has been merely a revolution at the margins in terms of public school innovation.[38]

Far from completely revamping how they deliver education to their students, district public schools have tended to respond to organizational competition with simple steps, such as enhanced professional development, better communications with parents, and new programs, many of which overlap with or expand existing offerings. Even as competition from school choice has intensified somewhat over the past decade, the local public schools that are the target of that competition have been constrained in their efforts to fully embrace truly innovative approaches to education, such as virtual learning or differentiated teacher pay.

In later work, Hess argues that organizational competition in education is likely to foster innovation not so much in the "brownfields" of district school systems but in the "greenfields" of charter schools and virtual schooling.[39] Much like environmental reform, attempts to turnaround perennially "underperforming" public schools can be fraught with difficulties, and reformers have a disappointing track record. Educational and environmental problems in brownfields can be contained, Hess stresses, but it is extraordinarily difficult to fully remedy them under such challenging conditions.

Like environmental greenfields, educational greenfields are unspoiled and wide open for bold experimentation and innovation. Increased choice and competition in education is likely to lead to bold innovation among competitors, primarily to the extent that it opens up new greenfield terrain for educators, parents, and students.[40] If choice and competition in education is to conquer the closed system of local public school districts, it will do so by maneuvering around them.

Thus, Hess and others would argue, it is no accident that we observe dramatically more educational innovation in the charter school sector and among new models of private schools than we do among local public school systems and the traditional stock of private academies and parochial schools. Choice and competition is allowing a thousand flowers to bloom, but it is not transforming dandelions into daisies.

To illustrate innovation in the charter and private school sectors, take for example, Summit Public Schools, a charter management organization founded in 2003 that takes a blended approach to student learning. Digital playlists allow teachers to personalize material at the student level. Ignoring the traditional bell schedule, students rotate between instructional activities at their own pace. Data generated from their digital learning experiences is then communicated to teachers, in order to allow them to better individualize instruction.

A recent innovative phenomenon in the private sector, meanwhile, is the emergence of "micro-schools," such as the for-profit network, AltSchool. Founder Max Ventilla describes these intentionally small learning communities of approximately 80 to 150 students as "Montessori 2.0." The company is currently experimenting with wearable devices to track students' movements and inform R&D efforts. AltSchool's alternative school model doesn't just rethink the use of technology for learning, but also reimagines the structure of school funding by incorporating venture capital, student tuition, and philanthropic sources. While student tuition pays for campus operations and teacher salaries, AltSchool's corporate functions are funded by venture sources, and philanthropic donations are utilized to offer needs-based tuition assistance.[41]

Destroying Inefficient Organizations

Finally, to what extent do we see competition from charter schooling and private school choice programs leading to economist Joseph Schumpeter's "creative destruction" of inefficient organizations and expansion of more efficient ones?

Of the approximately 6,700 charter schools that had ever opened in the U.S. through December 2011, a total of 1,036 (15 percent) were closed.[42] Part of the concept of charter schooling is to hold charters accountable for their performance at the time of charter renewal, usually every three to five years. The proportion of charter schools that were closed at the point of charter renewal was 7.3 percent in 2014–15.[43] Those charters were shuttered almost exclusively due to poor educational performance or because poor performance drove away students, rendering the schools financially unsustainable.[44] The fact that those charters that close are the lowest performing charters is consistent with a model of creative destruction.[45]

Whereas the closure of district schools used to be an exceedingly rare event, we are starting to see substantial numbers of district schools close in cities that have large charter school sectors, such as the District of Columbia and Detroit. Charter "franchises" such as KIPP, YES Prep, Dove Academies, BASIS, and Michigan Future Schools have leveraged the initial success of individual charter schools into national and regional charter school networks, attracting critical numbers of local public school students.

Expanded participation in the Milwaukee Parental Choice Program (MPCP) voucher initiative has had a similar effect. Although overall enrollments in the MPCP have increased every year since its launch in 1990, from 2006–2011, a total of 36 private schools participating in the MPCP closed or were expelled

from the program.[46] Analysis of student test scores from the voucher schools that closed compared to the voucher schools that remained open indicated that the closed schools had much lower levels of student achievement.[47] Importantly, 49 district schools in Milwaukee also closed from 2006–2011, and the student achievement in the closed public schools was significantly lower compared to the achievement in the schools that remained open.[48] In Milwaukee, one of the centers of parental school choice in the U.S., creative destruction appears to be culling weak schools from the herd.

In sum, competition from charter schools and private school choice programs in theory provides public school personnel with incentives to improve the performance of their schools. Actual evidence of innovation in local public schools is limited and largely incremental, however, perhaps because public school districts have long operated as closed organizational systems.

Charter schools, in particular, do provide entrepreneurs with attractive greenfields on which to try innovative educational approaches. There is also evidence of creative destruction in the closing of ineffective public and private schools in the face of competition and their replacement through the expansion of more successful schools.

In theory, we would expect these intermediate effects of educational competition to be strongest when school choice is widespread, many of the options are of high quality, and most of the government money follows the child to their chosen school. The next section demonstrates that, particularly when these conditions have been obtained, competitive pressure from charters, vouchers, and tax-credit scholarship programs have resulted in better performance from local public schools in the form of higher test scores for students.

The Effects of Organizational Competition on Student Achievement in District Schools

Though the previous exercise was helpful in telling us where to look for competitive effects, it is helpful to now look at ways in which increased organizational competition from charters, vouchers, and tax-credit scholarship programs is associated with students' test score outcomes. Does more competition through charters and taxpayer-funded private school choice affect student achievement in district schools? If so, is the effect positive, as market theory would predict, or do non-choosers suffer in the wake of expanded school choice, as opponents forecast?[49]

No less than 42 methodologically defensible evaluations of the effect of increased competition from charters, vouchers, and tax-credit scholarship programs on achievement in district schools exist (see Table 3).

We know a lot more about the effect of educational competition on public school performance in Florida (10 studies) and Milwaukee, Wisconsin (7 studies) than in Texas (3 studies); Michigan (3 studies); North Carolina (3 studies); Ohio (3 studies); San Antonio, Texas (2 studies); Arizona; California; Chicago, Illinois; Denver, Colorado; the District of Columbia; Indiana; Louisiana; New York City; and Philadelphia (1 study each). The studies use a variety of acceptable methodological approaches to create valid comparisons, including regression discontinuity, natural experiments, difference-in-differences, and regression techniques, although the nature of the question prohibits researchers from using random-assignment procedures that would permit us to infer causality more conclusively. They vary in size, scope, and duration. The studies have been conducted by more than two dozen different researchers, and most of them have been published in scientific peer-reviewed journals (see Appendix 1).[50]

TABLE 3 Overview of Studies of the Competitive Effects of Charters and Vouchers

Study	Publication Year	Program Type	Competition Measure	Research Method	Study Period	Summary
Florida (10)						
Chakrabarti	2013	Voucher	Receipt of an 'F' grade	Regression Discontinuity Design	1997–98 to 2001–02	Positive
Rouse et al.	2013	Voucher	Receipt of an 'F' grade	Regression Discontinuity Design	2002–03 to 2004–05	Positive
Forster	2008	Voucher	Receipt of an 'F' grade	Regression	2001–02 to 2006–07	Positive
Figlio and Rouse	2006	Voucher	Receipt of an 'F' grade	Difference-in-differences with school and year fixed effects	1998–99 to 1999–00	Positive
West and Peterson	2006	Voucher	Receipt of an 'F' grade	Regression Discontinuity Design	2001–02 to 2003–04	Positive
Greene and Winters	2004	Voucher	Receipt of an 'F' grade	Difference-in-differences	2001–02 to 2002–03	Positive
Greene	2001	Voucher	Receipt of an 'F' grade	Difference-in-differences	1998–99 to 1999–2000	Positive
Figlio and Hart	2014	Tax-credit Scholarship	Distance, Density, Diversity, Concentration	Difference-in-differences	1998–99 to 2006–07	Positive
Greene and Winters	2011	Disability Voucher	Density (voucher-accepting private schools within 5 & 10 miles)	Grade, year, and student-school fixed effects	2000–01 to 2004–05	Positive
Sass	2006	Charter	Density (charters within 2.5, 5, and 10 miles) and Market Share	Student-school fixed effects	1999–2000 to 2002–03	Neutral to Positive
Milwaukee (7)						
Carnoy et al.	2007	Voucher	Share of poor children who would qualify for vouchers; Density	Difference-in-differences	1996–97 to 2004–05	Positive
Chakrabarti	2008	Voucher	Share of poor children who would qualify for vouchers	Difference-in-differences	1986–87 to 2001–02	Neutral to Positive
Greene and Forster	2002	Voucher	Share of poor children who would qualify for vouchers	Regression	1996–97 to 2000–01	Neutral to Positive
Greene and Marsh	2009	Voucher	Density (relevant private schools within five different radii)	Student fixed effects	1999–2000 to 2006–07	Positive
Hoxby	2003	Voucher	Share of poor children who would qualify for vouchers	Difference-in-differences	1996–97 to 1999–2000	Positive
Greene and Forster	2002	Charter	Distance	Regression	1996–97 to 2000–01	Neutral to Positive
Zimmer et al.	2009	Charter	Density (charters within 2.5 miles) and Distance	Student-school and grade-by-year fixed effects	2000–01 to 2006–07	Neutral

TABLE 3 *Continued*

Study	Publication Year	Program Type	Competition Measure	Research Method	Study Period	Summary
Michigan (3)						
Bettinger	2005	Charter	Density (charters within 5 miles); Instrument 1 = Distance of a public school from a state university where the governor appoints the board; Instrument 2 = Herfindahl Index on racial shares	Difference-in-differences; Instrumental variables	1996 to 1998	Neutral
Hoxby	2003	Charter	Indicator for charter enrollment reaching a minimum of 6 percent	Difference-in-differences, controlling for school and year fixed effects	1992–93 to 1999–2000	Positive
Ni	2009	Charter	Percentage of students residing in school district lost to charters; Also measured duration of competition-defined as charter enrollment reaching 6 percent or higher	Education production function with school fixed effects	1993–94 to 2003–04	Neutral to Negative
North Carolina (3)						
Bifulco and Ladd	2006	Charter	Distance; Density (number of charters within 5 miles)	Student-school fixed effects	1995–96 to 2000–01	Positive
Jinnai	2014	Charter	Density (number of charters serving relevant grade within 2.5miles)	Student-school and grade-by-year fixed effects	1996–97 to 2004–05	Neutral to Positive
Holmes, DeSimone, and Rupp	2006	Charter	Distance	Cross-sectional panel model, instrumenting the once-lagged score with the twice-lagged scoreStudent fixed effects	1996–97 to 1999–00	Neutral to Positive
Ohio (3)						
Carr	2011	Voucher	Public school is designated as underperforming	School fixed effects	2002–03 to 2007–08	Positive
Forster	2008	Voucher	Public school is designated as chronically underperforming	Regression	2005–06 to 2006–07	Neutral to Positive
Zimmer et al.	2009	Charter	Density (charters within 2.5 miles) and Distance	Student-school and grade-by-year fixed effects	2004–05 to 2007–08	Neutral
Texas (3)						
Bohte	2004	Charter	Density; Market Share	Regression	1996–97 to 2002–03	Positive
Booker et al.	2008	Charter	Reduction in Market Share and Density	Value-added model with campus-student fixed effects	1993–94 to 2003–04	Positive
Zimmer et al.	2009	Charter	Density (charters within 2.5 miles) and Distance	Student-school and grade-by-year fixed effects	1994–95 to 2003–04	Positive

TABLE 3 *Continued*

Study	Publication Year	Program Type	Competition Measure	Research Method	Study Period	Summary
San Antonio (2)						
Gray, Merrifield, and Adzima	2014	Voucher	Compared Edgewood district to other districts with no voucher program	Two-level hierarchical linear model	1993–94 to 2007–08	Neutral to Positive
Greene and Forster	2002	Voucher	Compared Edgewood district to other districts with no voucher program	Regression	1997–98 to 2000–01	Positive
Arizona (1)						
Gray, Merrifield, and Adzima	2003	Charter	Indicator for charter enrollment reaching a minimum of 6 percent	Difference-in-differences, controlling for school and year fixed effects	1992–93 to 1999–2000	Positive
California (1)						
Zimmer and Buddin	2009	Charter	Density (charters within 2.5 miles) and Distance	Student-school and year fixed effects	1997–98 to 2001–02	Neutral
Chicago, IL (1)						
Zimmer et al.	2009	Charter	Density (charters within 2.5 miles) and Distance; Market Share	Student-school and grade-by-year fixed effects	1997–98 to 2006–07	Neutral
Denver, CO (1)						
Zimmer et al.	2009	Charter	Density (charters within 2.5 miles) and Distance	Student-school and grade-by-year fixed effects	2001–02 to 2005–06	Neutral
District of Columbia (1)						
Greene and Winters	2007	Voucher	Distance and Density (participating private schools within 1 mile)	Regression	2003–04 to 2004–05	Neutral
Indiana (1)						
Jacob and Dougherty	2014	Voucher	Distance, Density, Diversity, Concentration	School fixed effects	2008–09 to 2011–12	Neutral to Positive
Louisiana (1)						
Egalite	2016	Voucher	Distance, Density, Diversity, Concentration	School fixed effects; Regression discontinuity design	2010–11 to 2012–13	Neutral to Positive
New York City, NY (1)						
Winters	2012	Charter	Market Share	Student and school fixed effects	2005 to 2008	Neutral to Positive
Philadelphia, PA (1)						
Zimmer et al.	2009	Charter	Density (charters within 2.5 miles) and Distance	Student-school and grade-by-year fixed effects	2000–01 to 2006–07	Neutral
San Diego, CA (1)						
Zimmer et al.	2009	Charter	Density (charters within 2.5 miles) and Distance	Student fixed effects; School fixed effects; Instrumental Variables	1997–98 to 2006–07	Neutral

TABLE 3 *Continued*

Study	Publication Year	Program Type	Competition Measure	Research Method	Study Period	Summary
Anonymous (1)						
Imberman	2011	Charter	Reduction in Market Share (within 1.5 miles); Instrumental Variable 1: building space (20,000 to 50,000 sq. ft.); Instrumental Variable 2: Number of shopping centers within 1.5 miles	Student fixed effects; School fixed effects; Instrumental Variables	1997–98 to 2004–05	Neutral to Negative

Note: Sources are detailed in Appendix A.

Amidst the diversity of study locations, methods, years, and researchers, five overall findings stand out.

First, increased competition from charter schools and private school choice programs tends to result in better performance by affected public schools. Thirty of the 42 studies conclude that increased competitive pressure results in statistically significant achievement gains for at least some district school students in some subject areas.

Second, there is little evidence that students who do not participate in charter schooling or taxpayer-funded private school choice programs, the students "left behind" by school choice, are seriously harmed academically as a result. Not one of the studies finds that any group of public school students is adversely affected academically by competitive pressure from vouchers or tax-credit scholarship programs. Meanwhile, just two out of 21 charter studies report neutral to modestly negative effects associated with charter school competition. The claims of school choice opponents that the achievement of non-choosers will seriously decline in response to expanded school choice are refuted by the majority of the empirical evidence on the subject.

Third, the student achievement gains generated by competitive pressure on district schools tend to be modest in size. Although various studies expressed the results using different test score metrics, the findings are dominated by gains of just one or two percentile points per year in response to small changes in competitive pressure. For instance, researchers Figlio and Hart estimate that a one standard deviation increase in private school competition leads to test score increases of less than one-twentieth of a standard deviation. Thus, although Hoxby is correct to say that expanded school choice tends to create "a rising tide that lifts all boats," that surf swell is not exactly a tsunami. The fact that the payoff to public school students from charter, voucher, and tax-credit scholarship competition is consistently small, while generally positive, reinforces the idea that local public schools tend to be closed systems and, as Hess claims, respond to the pickax of outside competition with modest incremental (but positive) reforms.[51]

Fourth, like Sherlock Holmes, we can learn a great deal even from the proverbial "dog that didn't bark." Researchers Jay Greene and Marcus Winters conclude that the high-profile federal voucher program in Washington, D.C., did not significantly increase student achievement in D.C. public schools, at least not in its first year.[52] The D.C. voucher program was capped at 1,700 students, which is about 2 percent of all school-aged children in the District.[53] It was limited to students with family incomes below 185 percent of the poverty line. The maximum voucher amount of $7,500 was at or above the tuition levels for many parochial schools in the city, but just a fraction of the cost of attending elite private schools such as Sidwell Friends School, St. Albans School, and National Cathedral School. Those three schools and other top private academies in D.C. participated in the program but could afford only to accept and subsidize a small number of voucher students. The voucher program was funded with new

federal money, and local public schools were held financially harmless for the exit of students to the program. The program faced a statutory sunset after five years. Although it was reauthorized and slightly expanded in 2011, public school officials had good reason to think that the D.C. voucher program would be a temporary interloper in their world.

According to market theory, school choice programs should have their clearest competitive effects when choice is widespread; available options tend to be of high quality; the money follows the child out of their public school; and the program is permanent. The D.C. Opportunity Scholarship Program had none of these four key characteristics. Thus, it should not surprise us that this program, deliberately designed not to threaten the local public schools, had no clear effect on public school performance.

Fifth, the positive effect of competition from charters, vouchers, and tax-credit scholarship programs on public school performance has been the strongest when the intensity of competition has increased dramatically. Three studies covered periods in which the competitive pressure on local public schools jumped from a modest and contained level to a clearly threatening level. In all three studies the positive effect of competition on the subsequent achievement of public school students was largest and clearest when the amount of competition spiked. Some competitive pressure on public schools is not only clearly good for students, at least based on a lot of observational evidence, but lots of competitive pressure on schools appears to be even better for them.[54]

Moreover, this pattern of results further reinforces the idea that local public schools operate as closed systems, offering only incremental reforms, when limits on competition permit them to do so. When school choice suddenly becomes so widespread that it represents a serious threat to the continued existence of local public schools—as happened in Florida, Milwaukee, and San Antonio—the achievement of public school students rises in response, suggesting that the affected schools transform themselves into much more open systems that constructively adapt to pressure from their external environment.

The Effects of Organizational Competition on Education Funding

School productivity is a function of student outcomes divided by school inputs. We know from an extensive empirical research base that competitive pressure from charter schools and taxpayer-funded private school choice programs tends to produce at least modest increases in student achievement under most circumstances. But does expanded school choice also increase school productivity by reducing educational inputs? The answer is: It depends.

School choice through charter schools and taxpayer-funded private school choice programs certainly has the potential to reduce education spending and thereby increase school productivity. School choice providers pressure schools to contain costs. Economist John Merrifield has pointed out, however, that the early design of school choice programs did nothing to encourage parents to factor price into their school selections.[55]

All charter schools are totally and equally free to the consumer, and most voucher programs are designed so that the maximum voucher amount must be accepted as full payment for the education of the child, even if the marginal cost to the school of providing that education is higher than the ceiling. Voucher maximums tend to be "price-setting," as the tuitions of participating private schools tend to converge on the top voucher amount.[56]

Because a lower price is not a competitive advantage for a school of choice, there is little incentive for government-supported public, charter, or voucher schools to economize beyond what is necessary to stay solvent, given the maximum price set by the government. Tax-credit funded vouchers usually require parents to "top-up" the voucher value so that specific form of school choice holds some prospect of inducing greater efficiency in education via price competition.

Education savings accounts, however, hold the greatest promise for using parental school choice to put price pressure on schools because parents have a fungible pool of education dollars to spend and the opportunity to spend it on more than just school tuition. Some ESA programs even permit parents to keep residual funds for a child's college expenses, a feature that definitely creates an incentive for parents to be price sensitive in the education marketplace.

Even though the government sets the price of educating a child in a charter school, voucher program, or tax-credit scholarship program, the set price is consistently and substantially lower than what the government pays on average to educate students in district schools.

Nationally, charter schools receive an average of 28 percent less in funding per pupil than do their local public schools, a discrepancy that totals $3,814 per student per year. In urban areas, the gap between per-pupil funding in district schools, charter schools, and taxpayer-funded private school choice programs is even more substantial (see Table 4). On average, urban charter schools receive just 70 percent of the government funding provided to district schools in cities. The average urban school voucher awarded in 2009–10 was worth just 42 percent of per-pupil funding in urban local public schools. Tax-credit scholarships provided to inner-city students averaged 15 percent of the cost of educating the child in urban district schools.

Given such dramatic differences in the cost of schooling charged to the government across these four alternatives for educating inner-city students, governments have the potential to generate substantial cost savings and efficiencies to the extent that policies lead to fewer students being educated in district schools and more students being educated in charter schools or through private school choice programs.[57]

One empirical study has clearly demonstrated the efficiency advantage of charter schools compared to district schools. Patrick J. Wolf (one of the authors of this report) and his colleagues matched up charter and district school funding data with evidence of student achievement gains in the two public school sectors to measure the productivity of charters relative to district schools. For 21 states in which data were available, charter schools demonstrated a productivity advantage of 40 percent in math, producing 17 more NAEP points per $1,000 invested compared to district schools. The charter productivity advantage in reading was similar, at 41 percent. The productivity advantage of charter schools is driven primarily by the significantly lower level of average inputs in that sector relative to district schools, as student performance in the aggregate is almost equal across the two sectors. Of course, obtaining similar outputs at significantly lower cost is the very definition of greater efficiency, and this study indicates that is obtained in the charter school sector in the U.S.[58]

For society at large, charters and private school choice programs hold the prospect for increasing the efficiency of education so long as the government funding moves with the child. State charter school laws, voucher programs, tax-credit scholarship programs and ESAs vary dramatically regarding the extent to which student education funding either a) travels with a given public school student as she

TABLE 4 Urban Student Funding by School Type, 2009–10

Type	Per-Pupil Amount	% of District School Amount
District School	$13,839	100
Charter School	$9,716	70
Voucher	$5,771	42
Tax-Credit Scholarship	$2,044	15

Source: Bruno V. Manno, "School Choice: Today's Scope and Barriers to Growth," *Journal of School Choice* 4, no. 4 (2010), p. 518, doi:10.1080/15582159.2010.526861.

changes school sectors or b) remains with her previous public school after she leaves, a phenomenon often referred to as funding "ghost students." The D.C. voucher pilot program was an extreme example of holding local public schools financially harmless, at least in the short run, for the loss of students to school choice. The federal government paid up to $7,500 for the education of each voucher student in their private school of choice while the District government paid $15,000 for the student not to be educated in the school that she left. Because the D.C. voucher program also did not demonstrate positive competitive effects on public school achievement (perhaps because public schools continued to recieve funding for students they were not educating) the program resulted in a decrease in educational productivity in the public sector. The fiscal design of the D.C. voucher program is not typical, however.[59]

Milwaukee and Florida are examples of systems that, unlike the District of Columbia, send most educational dollars to students wherever they choose to attend school. In Milwaukee, when a student leaves a local public school for a private school through the voucher program, all of their state education funding and some locally-provided money leave the public school system with them. Since the maximum annual value of the Milwaukee voucher of around $6,500 is considerably less than the total of state and local spending per pupil in Milwaukee Public Schools, the operation of the Milwaukee Parental Choice Program saves the state a considerable amount of money, estimated by Robert Costrell to be $52 million in 2011.

Florida's tax-credit scholarship program and McKay disability voucher programs also have the practical effect of connecting school funding with the individual student, as local public schools lose all of the per-pupil state and federal funding associated with each student who leaves the public school system with a voucher. The financial arrangements for charter schools in Milwaukee and Florida also provide for funds to follow the students. Thus, Wisconsin and Florida are clearly enhancing the productivity of education in their state through their school choice programs, as educational competition is both increasing student test scores in public schools and reducing the public cost of providing that higher level of education.[60]

Fiscal Analyst Jeff Spalding completed a national study of the fiscal impact of school voucher programs. The ten programs in his study are estimated to have saved the country $1.7 billion in educational expenditures from 1990–91 through 2010–11. Naturally, as voucher programs continue to grow in enrollments and maintain maximum voucher values that are below the per-pupil expenditures in public schools, the fiscal savings from private school choice programs nationally will only increase from that already considerable amount.[61]

School choice policy likely has substantial unrealized potential in the area of educational cost containment. From a policy perspective, charters, private school vouchers, and tax-credit scholarships are limited in the extent to which they can motivate efficiency improvements because they don't exert price pressure on providers. The per-pupil funding levels for charter schools and the maximum voucher amounts set by policymakers appear to be operating as de facto spending floors for schools.

Still, the prices that have been set in state law for educating students in charter schools and voucher or tax-credit scholarship programs are significantly lower than what would be spent on those students if they instead attended a district school. Efficiencies are at least being realized in the charter sector, which now educates 5 percent of U.S. school children, and through taxpayer-funded private school choice programs, which educate less than 1 percent of them.

In the long run, ESAs may be better policy instruments to realize productivity gains in U.S. education because of the flexibility they offer and the incentive for providers to innovate as they unbundle various educational services.

Best Practices for Policy Design

Despite impressive growth rates over the past 25 years,

taxpayer-funded private school choice programs still only educate around 354,000 students while charter schools serve 2.5 million. Even if we combine those two figures, they collectively represent just 6 percent of all public school students in the U.S. Given the small number of choice users actually being directly assisted by these programs, any notable overall gains in productivity will require improvements in the traditional public school system. What are the policies that will maximize that impact? Policymakers should first consider if their state offers an environment that is receptive to the creation and survival of innovative and diverse schools. Second, policymakers should address the degree to which effective schools are empowered to scale up, expand, and reach a broader population of students. These are the general, strategic considerations that give rise to our more specific recommendations below.[62]

Encouraging Innovative and Diverse Schools

The task of developing a school that offers high-quality educational opportunities demands a well-resourced and entrepreneurial leadership team, large amounts of time and energy, access to appropriate facilities, a coherent curriculum, a steady source of revenue, and a committed corps of dedicated teachers with a strong vocation for service. The human capital demands alone can be overwhelming, as leaders search for faculty with zeal, drive, and resolve. Add to that a commitment for serving students in oftentimes under-resourced urban cores. In the face of these challenges, there are concrete ways that state-level policies can support the efforts of administrators trying to get a new school off the ground.

Flexible Legislation

At a basic level, policymakers should be cognizant that new schools might not look like existing district schools, which are only gradually shedding the characteristics of Progressive Era factory-model organizations. It might not be the case that a school created in 2015 will feature self-contained classrooms, a single instructional track, a uniform school day, or traditional academic year.

School choice legislation written today needs to be flexible and thoughtful enough to facilitate new models of schooling that have not yet been widely implemented, especially those that rely on technology to leverage learning.

Take, for instance, the Course Choice program that was piloted in Louisiana in 2012. Students who are dissatisfied with the course offerings at their existing school can shop among alternative public and private providers, including those that are exclusively online or feature a hybrid of face-to-face and distance instruction. For students attending low-achieving public schools, the Course Choice program is offered at no cost. By designing the legislation to permit providers who do not merely offer variation on a familiar theme but reimagine paradigms of learning, policymakers ensured that the students at the almost half of Louisiana public schools that do not offer a single Advanced Placement course can access this material without the disruption of enrolling at an entirely new school. Unbundling individual courses in this way ensures students have the flexibility to develop a personalized, à la carte course load and providers have the freedom to specialize.[63]

Supporting Complementary Institutions

Another practical way that policymakers can support the development of new schools is by supporting the complementary institutions that go hand in hand with the provision of K–12 education. New schools have to think about attracting and developing human capital with the technical capacity to innovate, to see outside the box, and to improve outcomes whilst containing costs. Institutional partners like teacher education programs can offer support and resources to help address this human capital challenge.

The Relay Graduate School of Education, based in New York City and with campuses in five states,

is one example of an updated teacher preparation program designed to prepare individuals to work in results-oriented schools, such as those that operate in competitive marketplaces. They celebrate the fact their faculty are not sitting in ivory towers. Instead, they bring in outside experts to train, supervise, and offer relentless feedback to their beginning teachers. It's unlike 99 percent of programs in traditional colleges of education, but serves only 1,400 teachers a year right now.

Similarly, policymakers might consider supporting principal education programs that are designed to teach those distinct skills that are necessary for a school leader to be successful in a choice environment. In addition to the instructional leadership skills that any principal needs, a principal operating in a competitive educational marketplace needs a) to be effective at relationship building with scholarship granting organizations, such as Step Up for Students in Florida and the corporate executives who donate to such organizations, b) have the interpersonal skills and drive to get to know local tax preparers who can inform eligible families about their private schooling options, c) have the ability to lead marketing campaigns and grassroots recruiting to build school enrollment, d) have the desire to build a distinctive school culture that helps their school stand out from competitors, and e) have the grit required to develop an intense familiarity with the often elaborate application processes for the various voucher programs and funding streams families may use to access their school. A school's paperwork has to be complete and on time, and the school leader needs the basic accounting skills to manage the reporting requirements associated with the different choice programs. Finally, it helps if the principal can speak multiple languages, particularly in low-income, minority communities where English is not the predominant language and where parents may need one-on-one consultations to convince them that a private school education truly is attainable and affordable for their child.

Principal preparation programs, such as Building Excellent Schools (BES) and the Mary Ann Remick Leadership Program (RLP) through the Alliance for Catholic Education at the University of Notre Dame, target such critical skills. But these programs are small and selective, and the training costs involved limit their expansion. Grant-funded BES fellows participate in a rigorous, year-long preparation program in charter school leadership in exchange for a generous professional stipend. A full-time director of development and communications oversees significant fundraising efforts to support the non-profit's operation, which receives donations from the Annenberg Foundation, the Eli and Edythe Broad Foundation, the Walton Family Foundation, and 21 others. Individuals wishing to participate in the RLP three-year training program for Catholic school leaders, meanwhile, do so at a cost of $21,000, even with a significant scholarship of $27,000 offered by the University of Notre Dame. In most cases, it is up to the school, diocese, or sponsoring religious community to assist with the financial cost of the program. The right principal can catalyze change, but in the absence of financial support, for example from government tax credits to partially cover the expense, these talented and passionate individuals may not have the resources to access a first-rate preparation program like BES or the RLP.[64]

A Technical Assistance Lab

Partner institutions can also play a less direct role by providing general information instead of directly training school employees.

For anyone starting a new school, it is not clear where to turn for knowledge about what works. There is no central repository that stores "best practices" around the delivery and financing of the educational enterprise, or the recruitment and retention of talented teachers and administrators. Principals may be aware that they should be using data to inform consequential decisions. They may have read about an innovative new approach that has the potential to be impactful, but they may be ignorant of the efficacy of specific approaches or practices once schools actually try to implement them.

Philanthropies can assist with the creation and dissemination of such knowledge by funding independent organizations that offer technical assistance to new private schools and analyze implementation using rigorous analytic methods that are analogous to those used in the social sciences and medicine.

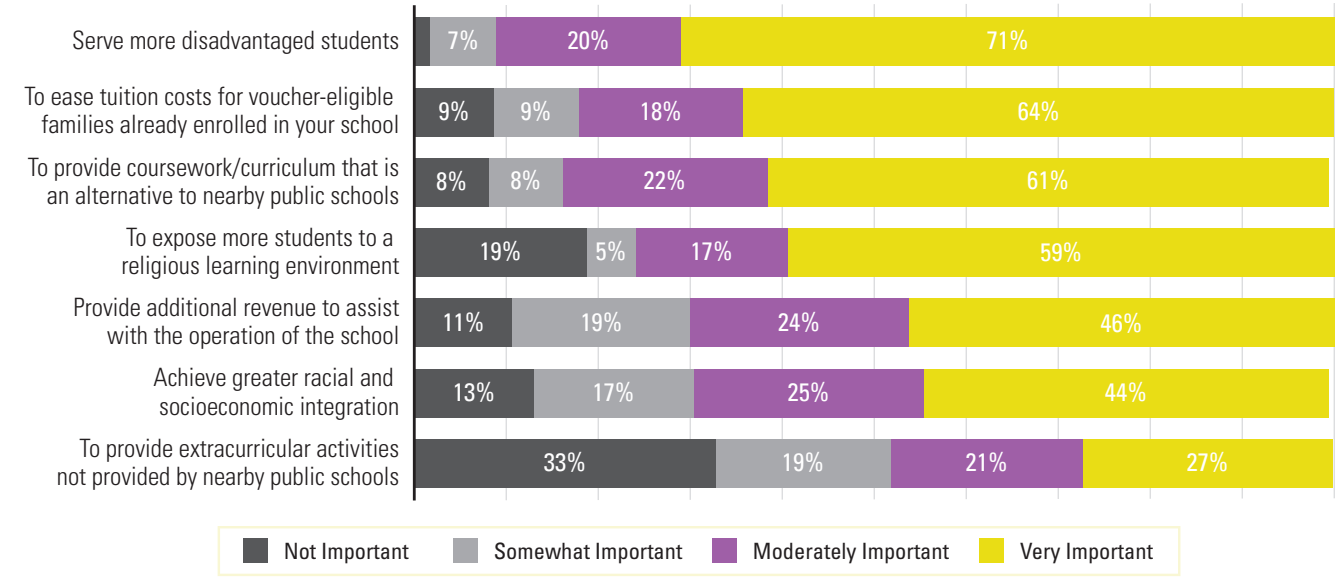
Such organizations already exist in the public sector. The Government Performance Lab at Harvard University, with funding from both public and private sources, offers pro bono technical assistance to state and local governments interested in developing and rigorously evaluating solutions to persistent problems that inhibit the efficient and effective delivery of core government services. A private school analog to the Government Performance Lab, focused exclusively on innovative and diverse approaches to the provision of education, could support emerging private schools in that critical incubation phase. This would not only assist individual schools but provide a repository of implementation evaluations to share with peer schools, so they can replicate successful programs and approaches.

Offering Innovation Grants

Policymakers may also consider offering some type of innovation grant for schools that open in challenging communities with a history of significant dysfunction and deeply embedded social problems. By rewarding highly effective schools that beat the odds with challenging-to-educate students, this will incentivize new providers to establish where they are needed most.

Research suggests that private school leaders would be responsive to such an incentive. For instance, when researchers Kisida, Wolf, and Rhinesmith asked private school leaders in Indiana, Louisiana, and Florida what motivated their participation in their state's private school voucher program, the highest-rated reason was the opportunity to serve more disadvantaged students (see Figure 5).[65]

FIGURE 5 Reasons for Participation in Private School Choice Programs in Indiana, Louisiana, and Florida



Note: n = 572

Source: Brian Kisida, Patrick J. Wolf, and Evan Rhinesmith, *Views from Private Schools: Attitudes About School Choice Programs in Three States* (Washington, DC: American Enterprise Institute, 2015), https://www.aei.org/wp-content/uploads/2015/01/Views-from-Private-Schools-7.pdf.

Spreading What Works and the Challenges of Scaling Up

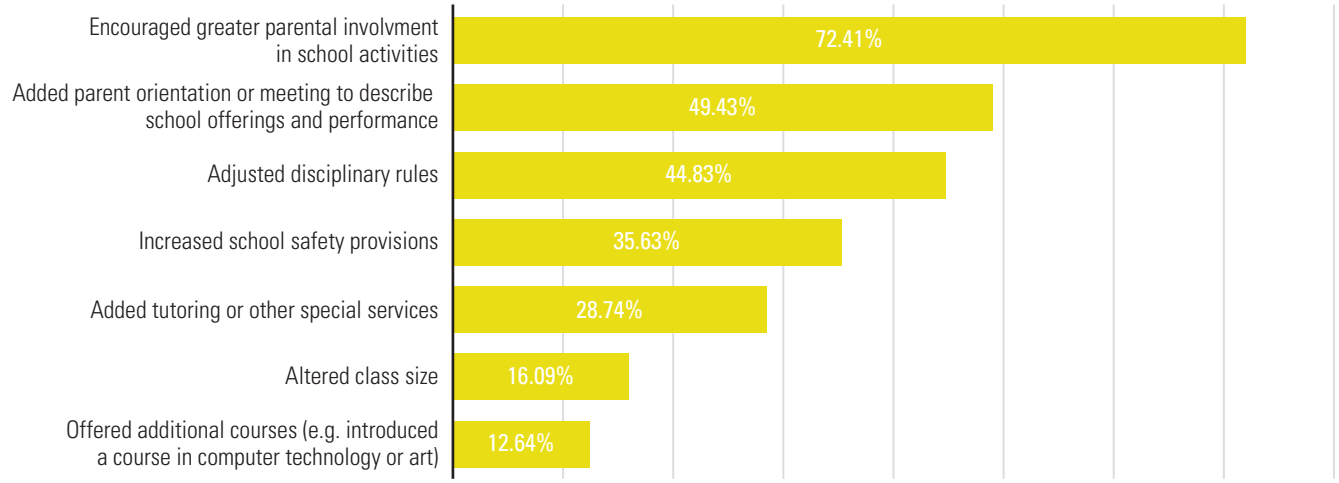
In most states, current education policies are not amenable to the multiplication of existing schools, even highly effective ones. How can policymakers help thriving school operators reproduce and flourish? It's not enough for policymakers to enact legislation that establishes an ESA or private school voucher program and walk away. There needs to be accompanying action to make sure the children for whom the programs are intended can actually access them. This requires conscious and purposeful companion policies that maximize access to high-impact schools.

The easiest place to start is by encouraging an existing provider to scale up so that it doubles or triples the number of students served. The primary barrier currently inhibiting this type of growth is that vouchers are designed to, at best, cover the marginal cost of educating one student. They do not offer any support for the costs required to build a new classroom, add additional courses, or hire a new fourth-grade teacher. Even well-established private schools may struggle to access private market loans that would finance an expansion, given the fluctuating and volatile nature of enrollment from year-to-year. States could step in by offering school expansion loans with competitive interest rates or dedicated facilities funding to enable private schools to retrofit public school buildings that have fallen out of use due to declining enrollment.

If ignored, funding constraints can generate supply-side congestion in a school choice marketplace, stifling growth even by highly successful private schools with a mission to serve disadvantaged populations. In school year 2010–11, Wolf and colleagues surveyed 87 private school leaders in Milwaukee, Wisconsin to ask about their experiences participating in that city's private school voucher program. One of the questions asked was if schools had made any changes with the specific intention of encouraging voucher-eligible students to enroll in their school or to assist those that were already enrolled. Figure 6 displays the results of that survey, with responses ranked in order of the frequency with which school leaders reported implementing a given strategy.

The most frequent (and arguably the least expensive) response was encouraging greater parental involvement in school activities as a tactic to increase enrollment and improve the experiences of voucher-

FIGURE 6 School Improvement Efforts Intended to Increase Enrollment and Improve the Experiences of Voucher-Eligible Students



Note: n = 87 principals of private schools participating in the Milwaukee Parental Choice Program in 2010–11.
Source: Authors' calculations.

eligible students. Seventy-two percent of school leaders reported that they had tried this strategy.

Without a doubt, the increased presence of parents in and around the school building gives the faculty and leadership a chance to showcase the positive aspects of their school environment, but as a long-term strategy for growing market share, it is a weak one. Nonetheless, it is unsurprising that the majority of schools surveyed opted for this approach, given that the vouchers for students participating in the Milwaukee Parental Choice Program were $6,442 that year, the lowest value the voucher had been since the 1997–98 school year, after adjusting for inflation. Indeed, if we were to rank the same seven options in order of cost from lowest to highest, the graph would remain essentially unchanged, demonstrating the strength of the association between the funding available and the types of action schools take to scale up their operation.

Once an existing operator has achieved success with a single campus, the leadership team may become interested in starting a network of high-performing schools that extends across an entire state. Financing such expansions involves a high degree of risk, however, which is why leaders should be empowered to leverage new social financial models that have emerged from partnerships between the public, non-profit, and private sectors. These include social impact bonds, innovation funds, and impact investing. All three models compel the collection of evidence to inform an evaluation and, while still far from mainstream, social finance tools offer a new mechanism for grant making that should be exploited to encourage the replication of high-performing schools.

For instance, pay-for-success (PFS) contracts rely on public-private partnerships to advance innovative but risky ventures by leveraging a rigorous, outcomes-based contract. Government only pays for programs that deliver improvements in specific, measurable outcomes, verified by independent evaluators. And if the agreed-upon outcome is not achieved? Government pays nothing, and the private funders lose their initial investment.[66]

The trouble with PFS contracts, however, is that while the total expected benefits typically far outweigh the costs, the expected benefits to state and local governments may not. Harvard economist Jeffrey Liebman has thus called on the U.S. Department of the Treasury to tap the federal Incentive Fund to accelerate the widespread adoption of PFS models by state and local governments. While not all program areas are amenable to the use of a social finance instrument, the replication and expansion of high-performing private schools that accept public dollars certainly holds promise.[67]

Containing the Impulse to Over-Regulate

Charged with protecting the public interest, policymakers must decide how to regulate a school choice marketplace. On the one hand, regulations ensure market stability because they provide families with reliable information about school performance. They also provide feedback to the legislators who passed the program in the first place by showing whether a program really works. On the other hand, excessive flexing of regulatory muscle can choke innovation and lead to distortions in school supply.

As policy analyst Andrew D. Catt has documented, private schools already face substantial sets of statutory requirements in U.S. states prior to the enactment of private school choice programs, which then add more regulations.[68] The ability to innovate and customize is part of the secret sauce of private schooling; excessive regulation by the state could mess up the recipe. Some basic guidelines for balancing that tension are as follows:

- Private schools should be allowed to maintain a reasonable degree of autonomy over instructional practices, pedagogy, and general day-to-day operations.

- Beyond a background check, school leaders should be the ones determining teacher

qualifications in line with their mission.

These two principles are fundamental and universal. Without them, parental school choice is robbed of its essence. When thinking about other aspects of private school accountability, regulators should carefully consider both ends of the spectrum. Specifically:

- What data and metrics will be employed to judge school performance? Schools should be allowed to choose from among a robust set of nationally norm-referenced tests to administer to students in choice programs so that a focus on the state test does not narrow the private school curriculum.

- Should success be judged in a binary manner or along a continuum of benchmarks? Schools should be judged on the basis of a continuum of benchmarks that measure school value added or at least control for the education level of the student in the past.

- What consequences will be associated with failing to live up to expectations, and what agency or department is responsible for enforcing such consequences? As this report has shown, market mechanisms in education do instigate the "creative destruction" of poorly performing schools, but government certainly has a role in supporting that process through informing school choosers about school performance levels and perhaps even limiting school choice enrollments for persistently "underperforming" schools.

- Should schools be evaluated in a relative or absolute sense (i.e., should an underperforming choice school remain open if students' schooling alternatives are even worse)? Context matters in these cases. Authorizers should consider the quality of the practical alternatives before they take any drastic action against a school that does not look to be up to snuff.

- Should there be rewards for highly effective private schools so that they have the resources to expand? Accountability systems should wield carrots as well as sticks whenever possible.

The need for flexibility for the next generation of educational choice policies also leads us to support a particular model of private school choice: ESAs. Survey research indicates that heavily regulated school voucher programs can be unappealing to private providers of education, leading many of them to choose not to participate in such programs. Tax-credit scholarship programs, with generally lighter levels of regulation than government voucher programs, are more popular with providers, thereby expanding the number of options available to parents.

ESAs tend to be lightly regulated, like tax-credit scholarship programs, but also provide parents with options—besides just private school tuition—to purchase with their educational dollars. Such flexibility makes it easier for parents to customize their child's education within the context of an ESA, especially as advances in technology make educational content available to almost anyone, almost anywhere.[69]

Conclusion

The availability of parental school choice, in various forms, is increasing steadily in the U.S. The recent growth in the enrollments of charter schools and taxpayer-funded private school choice programs is both impressive and important, as such programs directly challenge local public school districts for students and funds.

Charters, vouchers, tax-credit scholarships, and ESAs create incentives for public school personnel to better serve students in order to retain them in the district system. Competition from these sources also changes the operation of public schools, but only in incremental ways due to the traditionally closed nature of public schools as organizational systems.

Much of the bold innovation that we observe in K–12 education in the U.S. is occurring within the greenfields created by opportunities to charter new

and different public schools. Pressure from charter schools and taxpayer-funded private school choice programs appears to be engineering the valuable process of creative destruction, as poor-performing public and private schools are closed and their enrollments absorbed by better-performing schools and school franchises. As a result of both the incremental innovations and creative destruction brought about by competitive pressure, evidence from dozens of empirical studies suggests that even non-choosing students perform better academically when school choice is expanded.

Finally, potential educational cost savings due to provider competition have only been partially realized to date, as price setting by government and hold-harmless provisions prevent K–12 education from becoming cheaper, even as it becomes somewhat better through organizational competition.

Is competition from charter schools and taxpayer-funded private school choice programs improving the productivity of education in the U.S.? Yes, the sum of this descriptive and analytic evidence indicates that it is. Could the payoffs be even larger in the future? With better policy designs in the areas of encouraging innovative and diverse schools, spreading what works and scaling up, and containing the urge to over-regulate—most certainly the answer is: yes.

Appendix 1:
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Notes

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All individuals have opinions, and many organizations (like our own) have specific missions or philosophical orientations. Scientific methods, if used correctly and followed closely in well-designed studies, should neutralize these opinions and orientations. Research rules and methods minimize bias. We believe rigorous procedural rules of science prevent a researcher's motives, and an organization's particular orientation, from pre-determining results.

If research adheres to proper scientific and methodological standards, its findings can be relied upon no matter who has conducted it. If rules and methods are neither specified nor followed, then the biases of the researcher or an organization may become relevant, because a lack of rigor opens the door for those biases to affect the results.

The authors welcome any and all questions related to methods and findings.

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