
Education Vouchers and the Cleveland Scholarship Program ¹

Clive R. Belfield

Vouchers are a method for financing government services by which clients are given coupons of prescribed value for use at any eligible service provider. Vouchers for K–12 education continue to attract interest, offering the promise of greater parental choice, enhanced school efficiency, and improved educational outcomes for students.

The first formal voucher program was established in Milwaukee in 1990; by 2003–04, 12,778 students were participating across 107 schools. Its practical success was followed by programs developed in Cleveland, Florida, Colorado, and Washington, D.C. (see Belfield and Levin 2005). At their most basic, these programs offer an “existence proof” for vouchers. With them has come sustained academic inquiry into education vouchers and their anticipated effects.

Here we summarize this evidence to establish stylized facts about vouchers. The evidence is then used to inform evaluation of the Cleveland Scholarship Program (CSP), including its effects on students’ test scores. Established in 1995, the CSP now has particular prominence because, in 2002, the U.S. Supreme Court ruling *Zelman vs. Simmons-Harris* resulted in federal approval of inclusion of religious schools in voucher programs. Although operating for almost 10 years, the status of the Cleveland program had still been uncertain; with the legal challenge resolved, the CSP is now affirmed, and more vouchers are being offered across all school grades. In 2005, Ohio ratified a statewide version of the CSP to be introduced in 2006: This will provide as much as \$5,000 each for up to 14,000 students enrolled in schools that receive the state’s lowest performance ranking for three straight years. Evidence on the efficacy of the program is therefore critical, both for the direct development of policy in Ohio and for voucher initiatives in other states.

NEW RESEARCH ON EDUCATION VOUCHERS

Research on vouchers has not only examined their academic benefits; it has also considered how parents choose schools, how schools operate, and how vouchers influence public finances. These investigations are useful for informing program design and for setting vouchers within the broader context of school-choice reform.

In looking at school-choice decisions by parents, it is clear that many affluent families already have choices; attention therefore focuses on how voucher programs might open up choices for those families who are constrained. Thus far, all voucher programs have been targeted to low-income families or to districts with low-performing schools. Clearly, choice sets are being expanded for low-income families. However, several mediating factors make voucher programs less equitable in actuality than is implicit in a simple reading of the program eligibility rules. First, religion pervades family preferences of schools (Campbell et al. 2005). Certainly, parents value high test scores, but preferences are varied, with many families choosing their neighborhood school. Second, race has a strong influence on school-choice decisions. This relationship is complicated by different patterns in Hispanic and African American children and by the fact that public schools show strong patterns of racial segregation. However, vouchers consistently lead to greater student segregation (even in a highly minority public school system such as Washington, D.C.). Third, school choice is an action; that is, parents must actually use the voucher to change their child’s school, conditional on eligibility and having new choices. Consistently, usage rates are much lower—perhaps by one-third—than offer rates (Howell and Peterson 2002, table 2). Moreover, even within low-income groups, the children most likely to succeed in school are the ones most likely to utilize the voucher (as are

white students). Also, a nontrivial proportion of those who receive vouchers are already in private school.

Research has also investigated the supply of private schooling. Without supply, family preferences become meaningless, and, if private schools do not operate in ways distinct from public schools, there is no advantage to students choosing them.

Several consistent findings emerge from the research on supply. Most participating schools are religious (across various faiths); secular schools have a small market share. The supply of new schools appears reasonably elastic: For example, almost one-half of the schools participating in the Milwaukee program were founded after it was introduced. But voucher student enrollees are increasingly a majority within their schools: by 2001, 40 percent of the schools participating in the Milwaukee program had more than 80 percent of their students claiming vouchers. However, research on the inputs and technologies that private schools use (beyond selecting their students) and on which are more efficient has yielded very little: Economists are still no further ahead in identifying the separate benefits of ownership, innovation, and technical efficiency, that is, which inputs work best (Hanushek 2004). After controlling for student characteristics, most research finds only very modest advantages to private school. Finally, greater competition is likely to improve schools' performance (Belfield and Levin 2002), but the competitive pressures exerted by small-scale voucher programs are also likely to be modest.

Further research has examined how voucher programs might impinge on the existing public school system and its local financing. Because schooling is financed locally, individual school choices will feed back into house prices and district spending and, therefore, school quality. Nechyba (2003) reports several novel results from modeling the introduction of large-scale voucher programs. First, competition for high-ability students would increase; these students would pay lower tuitions, both as a result of the voucher and as a consequence of schools' greater eagerness to enroll them. Second, public schools would engage in more ability tracking to prevent high-ability students from switching to private schools. Both factors suggest further educational inequalities, with greater rewards (and resources) for high-ability students. Third, public-

school quality is most likely to decline in middle- or high-income school districts. Importantly, opinions about vouchers are likely to be driven more by perceived effects on property values than by educational outcomes; homeowners may be wary of education reforms that may raise uncertainty as to the value of their home.

The most high-profile research on vouchers has looked at whether they raise student achievement. The evidence here shows, at best, moderate advantages for voucher participants.

For the Milwaukee Program, Rouse (1998) found small but positive effect-size differences of 0.08–0.12sd per year for math but no effect for reading. However, the data were from the first five years of the program—religious schools were not participating, and the voucher students were concentrated in a few schools. For the Florida program, Figlio and Rouse (2005) found modest results from data on over 180,000 students. Voucher users in initially low-performing schools do post higher test scores, but much of this is attributable either to student characteristics or to teaching to the high-stakes test. Randomized field trials for vouchers in three cities found small test-score gains after three years (Howell and Peterson 2002). These treatment effects were primarily for African Americans in one setting, with no evidence of cumulative gains for those who used the voucher for the longest periods. Finally, it is worth noting that new evidence from expanded public-school choice points to the same conclusion, with few achievement gains from placement in a choice school (Cullen et al. 2005).

CLEVELAND SCHOLARSHIP PROGRAM

The Cleveland Scholarship Program operates in the Cleveland Municipal School District (CMSD), which has 75,000 students across 130 schools. Eligible schools are nonpublic, chartered schools located within the CMSD and approved by the state superintendent. Surrounding public-school districts are eligible to apply, and 5,734 students currently participate in the program. Initial enrollment in 1996 was 1,996, with total funding of \$5 million. Eligible children had to be in grades K–8, reside within the CMSD, and not require segregated special education. Low-income families were given preference, with those below 200 percent of the poverty level given 90 percent of tuition or \$2,250, whichever was lower;

families above 200 percent of the poverty level were given 75 percent of tuition or \$1,875, whichever was lower. About one-fourth of the students came from the latter group. In comparison, per-pupil expenditure in CMSD in 1996 was \$7,500 (including transport). In 2003–04, scholarships were made available for ninth grade and beyond, and funding was increased to \$3,000 for grades K–8 and set at \$2,700 for higher grades. Where voucher applications exceeded available placements, a lottery system was used.

Despite its usefulness for informing future voucher reforms, the Cleveland Scholarship Program has been the subject of little academic inquiry. The program is large enough to allow for samples of students according to voucher status and religious schooling, and with recent data, it offers an up-to-date evaluation of vouchers in light of recent school-choice reforms. Given the duration of the program, it is possible to examine the question of dose response (i.e., whether persistence in the program yields higher rewards). Also, CMSD has a high proportion of African American students, for whom vouchers are held to be most beneficial. Importantly, the CSP voucher is relatively ungenerous: if effects can be found for this program, it is likely that achievement gains would be even larger for more generous programs.

To identify effects, it is necessary to classify students according to voucher status: *users* (offered and used a voucher to attend private school); *non-users* (offered a voucher but did not use or stopped using it); *applicant rejects* (applied for but not offered a voucher); *eligibles* (could apply but did not); and *ineligibles* (not eligible according to program rules). Here, these last two groups are conflated into a general public-school comparison group.

The potential for bias in identifying effects from vouchers is high. Three kinds of bias are particularly important, but their effects are (probably) offsetting for this program. Applicant bias occurs when only those who apply for the voucher are likely to benefit from it. This will bias gains toward users because applicants are typically from motivated families. Eligibility bias occurs when those who are eligible differ both from those who apply and (separately) from those who do not apply. This will bias gains away from users, because CSP eligibility is conditional on low family income. (It is possible with these data to control for eligibility). Usage bias occurs when those who use the

voucher differ from those who do not use it, conditional on application and eligibility. This will bias gains in favor of users relative to non-users because usage is positively correlated with ability and family resources. In addition, data collection inevitably generates some response bias as survey attrition rates are higher for non-users.

EVALUATING THE CSP

Since 1996, the CSP has been evaluated by the Center for Education Evaluation at Indiana University (see Metcalf et al. 2003). The evaluation began with collecting data for those entering kindergarten in 1997 and has continued up to sixth grade in 2003. (No substantive changes in program design occurred during this period, but the legal status of the program was only resolved in 2002). The data set includes over 4,000 students who attend more than 100 separate schools. In terms of voucher status, the data set is composed of users (23 percent), non-users (10 percent), applicant rejects (16 percent), and a public-school comparison group (51 percent).

The data set has three advantages: it is longitudinal (including achievement measures); it includes students from multiple comparison groups; and it is a large sample spread across many different schools. However, the public group does not precisely conform to the above categorization: It includes both eligibles and ineligibles as part of a general comparison group. Also, the sample sizes are considerably lower because of attrition and missing responses.

Evidence on the CSP comports with extant research. Specifically, most students chose religious schools, and high (and growing) proportions of voucher applicants and users had previously been enrolled in private schools. Table 1 shows information on selected student characteristics across voucher status. This, too, conforms with other studies. African American students and low-income students (free-lunch eligible) are much less likely to use the voucher, conditional on being offered it.

To identify the achievement gains from the voucher program, we estimate a series of education production functions. The impacts of voucher status on achievement are reported in table 2. Terra Nova test scores in second and fourth grade are regressed against a set of student and school characteristics, including prior-year test scores (see table 2, notes).

Table 1: Descriptive Statistics by Voucher Status (Second-Grade Students)

	<i>Voucher user</i>	<i>Non-user</i>	<i>Rejected applicant</i>	<i>Public-school comparison group</i>
Black	56%	75%	58%	48%
Hispanic	7%	4%	6%	3%
Free-lunch eligible	58%	83%	50%	49%
<i>N</i>	<i>624</i>	<i>326</i>	<i>438</i>	<i>971</i>

These impacts are effect-size gains relative to the public-school comparison group in reading, math, and language.

The top panel of table 2 shows that voucher status has mixed effects. For reading, there are no statistically significant differences across the four groups in second grade. For math, voucher users report the lowest scores: the statistically significant effect size is -0.09sd against the public-school group and of comparable size against the other two groups. In contrast, for language, the public-school group does considerably worse than the other three groups; however, the voucher-user group gains the least—both non-users and rejected applicants show larger advantages. Given the biases that might lead to statistically significant gains for voucher users, we cannot find evidence that voucher students outperform relevant comparison groups in second grade. Moreover, the bottom panel shows that by fourth grade, the math penalty for voucher users persists, but the gains in language have dissipated to insignificance.

Additional testing using second-grade data affirms the weakness of any voucher effects. When we do not

control for prior achievement, the results do not favor voucher users: The math penalty is maintained, and the language advantage over the public-school group is eliminated. Moreover, the rejected applicants report statistically significant test-score gains in reading and language. When we compare users only against those who were not offered a voucher (the treatment effect), users report scores that are lower by 0.14sd in reading and 0.11sd in math, with no difference in language. When we examine whether those who have participated the longest in the program obtain the strongest effects, we find mixed effects across the three subjects. Finally, we test for whether the impact of vouchers differs by race. Restricting the sample to African American students, voucher users appear more disadvantaged: Their reading scores are now statistically significant and lower (-0.14sd); the math penalty is still evident (but not statistically significant); and the language advantage is not discernible. These sub-analyses give no indication that vouchers have a differential and beneficial impact for African American students.

Overall, there is no clear advantage for voucher students; if anything, there is a slight academic

Table 2: Effect-Size Test-Score Gains over Public-School Students

	<i>Reading</i>	<i>Math</i>	<i>Language</i>
<i>Second Grade:</i>			
Voucher user	-0.060	-0.092**	0.097**
Non-user	-0.019	-0.021	0.162*
Rejected applicant	0.083	0.026	0.136**
<i>N</i>	<i>1733</i>	<i>1786</i>	<i>1736</i>
<i>Fourth Grade:</i>			
Voucher user	0.043	-0.113***	0.038
Non-user	-0.065	0.044	0.076
Rejected applicant	-0.030	-0.055	-0.063
<i>N</i>	<i>2089</i>	<i>2102</i>	<i>2085</i>

Notes: Terra Nova test. OLS estimation. Effect sizes control for subject-specific first- and third-grade scores; African American; Hispanic; female; free-lunch eligible; unsubsidized lunch; class size; and years of teacher experience. * significant at 10%; ** significant at 5%; *** significant at 1%.

penalty. However, given that in 2001 the value of the voucher was less than \$2,400 and the opportunity cost in the public school system was approximately \$8,800, it might be concluded that the voucher program is cost-effective. Yet, back-of-an-envelope calculations show that this conclusion is premature. The CSP voucher does not include transportation, which must be paid by the district, nor does it include standardized assessments, which public schools must impose. It does not cater to special-education students or the most disadvantaged students (who do not take up the voucher). And, because the program is sub-additive, for every three vouchers distributed, approximately one student would have attended private school anyway. There are also additional administration costs.

Finally, the \$8,800 figure for CMSD is the average cost per student, not the marginal cost. With approximate costs of transport, assessment, special education, sub-additivity, and administration taken into account, the anticipated fiscal saving falls from \$6,400 (\$8,800-\$2,400) to perhaps \$2,500–\$3,000. Although this is still a sizeable cost saving, it does not account for marginal costs, student disadvantage, or any reorganization costs.

CONCLUSION

Recent research sheds light on the efficacy of vouchers. Broadly, it may be questioned whether

vouchers—even with some modest achievement gains—will be a catalyst for educational improvements. On the demand side, there are many steps before parents actually exercise choice. On the supply side, most of the participating schools are religious, with little evidence of new secular schools either opening or accepting vouchers. Competition will probably be muted. General equilibrium models explain why homeowners voters are wary about expanding voucher programs.

The Cleveland Scholarship Program readily fits into this general pattern, evincing similar features to voucher programs in Milwaukee, Florida, and now Washington, D.C. Although targeted at students from low-income families, these programs in fact serve those somewhat closer to the middle of the income distribution, when usage rates and prior schooling are accounted for. Students are highly likely to be in religious schools, and African American students are less likely to use their vouchers. Importantly, the CSP results are not encouraging with respect to achievement: The program shows a slight academic penalty for voucher users relative to other comparison groups. Thus, it seems unlikely that an expanded statewide program will radically enhance educational outcomes in Ohio.

ENDNOTE

¹ For a full version of this paper, see C.R. Belfield's "The Evidence on Education Vouchers: An Application to the Cleveland Scholarship and Tutoring Program," Working Paper, NCSPE, www.ncspe.org.

REFERENCES

- Belfield, C.R., and H.M. Levin. 2002. "The Effect of Competition on Educational Outcomes: A Review of the U.S. Evidence," *Review of Educational Research* 72: 279–341.
- Belfield, C.R., and H.M. Levin. 2005. *Privatizing Educational Choice*. Paradigm Publishers: Denver, CO.
- Campbell, D.E., M.R. West, and P.E. Peterson. 2005. "Participation in a National, Means-Tested School Voucher Program," *Journal of Policy Analysis and Management* 24: 523–41.
- Cullen, J.B., B.A. Jacob, and S. Levitt. 2005. "The Effect of School Choice on Student Outcomes: Evidence from Randomized Lotteries," *Journal of Public Economics* 89: 729–60.

- Figlio, D., and C.E. Rouse. 2005. "Do Accountability and Voucher Threats Improve Low-Performing Schools?" NBER, Working Paper, 11597.
- Hanushek, E.A. 2004. "What If There are No 'Best Practices'?" *Scottish Journal of Political Economy* 51: 156–72.
- Howell, W.G., and P.E. Peterson. 2002. *The Education Gap. Vouchers and Urban Public Schools*. Washington, D.C.: Brookings Institution.
- Metcalf, K.K., S.D. West, N.A. Legan, K.M. Paul, and W.J. Boone. 2003. *Evaluation of the Cleveland Scholarship and Tutoring Program, Summary Report 1998–2002*. Bloomington, Indiana: Indiana University School of Education.
- Nechyba, T.J. 2003. "What Can Be (and Has Been) Learnt from General Equilibrium Simulation Models of School Finance?" *National Tax Journal* LVI: 387–414.
- Rouse, C.E. 1998. "Private-School Vouchers and Student Achievement: An Evaluation of the Milwaukee Parental Choice Program." *Quarterly Journal of Economics* 113: 553–602.