

What Have We Learned about the Benefits of Private Schooling?

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In 1980, the U.S. Education Department, working with the National Opinion Research Center, began a panel study of high school students known as the “High School and Beyond Study.” The first wave of the study collected achievement test scores for approximately 50,000 high school students who were in either their sophomore or their senior year of high school. The survey also compiled detailed characteristics of schools and, for more than half the students involved, detailed follow-up surveys concerning school, work, and other activities.

The survey design yielded a sample that included a disproportionate share of private schools. When James Coleman of the University of Chicago took on the task of evaluating the first wave of data, he decided to exploit this unique aspect of the survey. In 1981, Coleman and two of his colleagues, Sally Kilgore and Thomas Hoffer, presented a report to the

National Center for Education Statistics entitled *Public and Private High Schools*, which concluded that the selection of superior students into private schools cannot explain the higher levels of achievement in private schools. Therefore, the authors argued that Catholic and other private schools are, as a rule, more effective institutions of learning than public schools.

This report and subsequent publications by Coleman and his associates ignited a heated and often acrimonious debate among social scientists concerning the relative educational performance of public and private schools. For example, Coleman, Kilgore, and Hoffer (1981) found that, in a population of students from similar backgrounds, private school students exhibit higher achievement and attainment. Critics, however, claimed that this result simply reflected inadequate controls for the individual traits and family background characteristics that foster academic success. Put simply, even if one knows a considerable amount about a student’s background and academic aptitude, the fact that her parents are willing to spend

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their time and resources to send her to a private school may provide additional information about the student's academic ability and family environment.

Because the 1981 report made controversial claims, it served as a catalyst for research on the relative performance of public and private schools. This paper attempts to summarize this research and also to assess what we have learned since 1981. Although many questions remain unanswered, one result seems clear. Black and Hispanic students in large cities often have the most to gain from private schooling, in particular, Catholic schooling. Further, the poor quality of many inner-city schools appears to drive this result.

The balance of the paper reviews results concerning private schooling's effect on academic achievement and attainment. I pay particular attention to the literature on Catholic school effects because Catholic schools constitute a large and relatively homogeneous set of private schools. I then discuss the implications for the ongoing debate over vouchers. I conclude with some thoughts about future research.

AT LEAST ONE CONSISTENT PATTERN

In the literature on the effects of private schooling, many results appear quite fragile. Estimates of the achievement gains associated with private schooling often vary considerably across studies that employ the same data sources. One result, however, remains constant across a number of studies that vary with respect to data sources and methodology. For many students, Catholic secondary schooling raises graduation rates.

The table on this page presents a summary of results from three studies. Evans and Schwab (1995) and Sander (1997) use the 1986 follow-up survey to the "High School and Beyond Study."¹ Neal (1997) uses data from the National Longitudinal Survey of Youth (NLSY). For each study, the table provides results from single equation models that explain high school graduation as a function of numerous family background characteristics and, in some instances, prior measures of achievement. Neal reports the effect of attending a Catholic secondary school on the probability of graduation. The other two studies report the effect of Catholic schooling on graduation rates, given that

students stay in Catholic school through the spring semester of tenth grade.

Evans and Schwab find that Catholic schooling increases graduation rates. According to their results, Catholic schooling raises graduation rates by 14 percentage points for whites and 13 percentage points for blacks. Further, Evans and Schwab find even larger gains from Catholic schooling when they restrict their attention to students in urban areas.

Neal's approach is slightly different because it employs sample definitions that involve both race and community type. The results suggest that urban minorities attending Catholic secondary schools experience a 26 percentage point increase in the probability of graduating from high school. The corresponding figure for urban whites is 10 percentage points. Neal's results for nonurban students, which are not reported here, indicate smaller and statistically insignificant effects on graduation rates regardless of race.

Sander examines graduation rates for rural students in the United States. He finds that, in towns outside major metropolitan areas, Catholic schooling has small and statistically insignificant effects on graduation rates.

These three studies all attempt to correct their single equation model estimates for selection bias. Single equation estimates may be misleading because unmeasured traits that make students more likely to attend Catholic schools may also make them more likely to graduate. I do not present the corrected estimates here because none of these studies finds significant evidence of selection bias. In fact, most studies report weak evidence

CHANGES IN THE PROBABILITY OF HIGH SCHOOL GRADUATION

Source	Sample	Graduation Rate (Percent)	Percentage Point Increase in Graduation Rate (Catholic Schooling Effect)
Evans and Schwab	White	83	14
	Black	80	13
	Urban	77	17
	Suburban	86	11
Neal	Urban: black and Hispanic	64	26
	Urban: white	76	10
Sander	Rural	82	6 ^a

^a Figure is NOT statistically significant.

of negative selection into Catholic schools, and none provides strong evidence that the unmeasured traits of Catholic school students make them more likely to succeed in school than observationally similar public school students.

I wish to focus on how the "effect" of Catholic schooling differs across demographic groups. There is clear evidence that the benefits of Catholic schooling vary with location. Both Evans and Schwab and Neal report that the benefits of Catholic schooling are greatest for students who live in heavily populated areas, while Sander finds that Catholic schooling has no effect on graduation rates in rural areas.

Location is not the whole story, however. Neal's results for urban minorities are particularly striking. A 26 percentage point increase in the probability of graduating from high school is an enormous effect. Further, Neal argues that a likely explanation for the concentration of Catholic school benefits in urban minority communities lies in differences between public schools, not in differences between public and Catholic schools. Neal estimates predicted graduation rates for public school students as a function of family background and community type. He constructs these estimates separately for whites and nonwhites and finds that in counties with fewer than a half million people, whites and nonwhites from similar backgrounds graduate from public schools at similar rates.

Consistent with Evans and Schwab's finding of large Catholic school effects in urban areas, the NLSY data reveal lower graduation rates for students of all races in large cities. However, the decline is much more dramatic for nonwhites. In cities, whites and nonwhites graduate at very different rates, and these differences cannot be accounted for by differences in family background. In short, the graduation rate of minorities in urban public schools is quite low when compared with the graduation rates of other urban whites "I minorities who live in nonurban areas.

Coleman and Hoffer (1987) examine dropout rates between the tenth and twelfth grades. Holding constant observed background characteristics among white students, they report an 11 percentage point gap between the dropout rates for Catholic school and public school students. For

minorities and for students from disadvantaged backgrounds, the gap is between 1 and 6 percentage points larger.²

Evans and Schwab also examine rates of college attendance. They do not report separate estimates of Catholic school effects for different populations, but they do report that, on average, Catholic schooling raises college entrance rates by about 14 percentage points. Neal examines college graduation rates and again finds evidence of large Catholic school effects among urban minorities. Neal's estimates suggest that Catholic schooling raises college graduation rates for urban minorities from 11 to 27 percent. Further, when Neal considers only high school graduates, the corresponding increase is from 16 to 30 percent. Neal reports significant, but slightly smaller, effects for urban whites.

Numerous studies report that Catholic schooling enhances educational attainment. In general, estimates of these Catholic school effects are always larger in samples restricted to urban residents and in most cases larger in samples restricted to minority students.³ Further, Neal reports that minorities in large cities appear to benefit most from Catholic schools because they face poor public school alternatives.

Because the pecuniary returns of education have increased dramatically over the past two decades, the gains in educational attainment imply significant gains in earnings. Neal reports that the gains in attainment he finds may raise adult wages among urban minorities by as much as 8 percent.

MIXED RESULTS ON ACHIEVEMENT

In their original paper, Coleman, Kilgore, and Hoffer (1981) reported that in reading and vocabulary, Catholic school sophomores are roughly two grade equivalents ahead of their public school counterparts, and in math, slightly more than two grade equivalents ahead. In addition, the authors found that roughly 60 percent of these achievement differentials reflected differences in family background and therefore concluded that Catholic schooling raises achievement by roughly one grade level. Further, the authors claimed that Catholic schooling effects are even larger for minority students and students from economically disadvantaged backgrounds.

Numerous scholars from different disciplines conducted replication studies that challenged the robustness of Coleman, Kilgore, and Hoffer's 1981 results, but I will not explore the details of this debate for two reasons.⁴ First, a proper summary would necessarily be long and tedious. Second, work with the 1982 follow-up data settled many of the points raised in the original debate. In 1982, the original 1980 sophomore cohort took another battery of achievement tests. Researchers were then able to estimate achievement models using prior achievement measures as a control. Coleman and Hoffer (1987), Willms (1985), and Alexander and Pallas (1985) all analyzed the achievement data from the follow-up study, and all three reported similar results. In verbal skills, mathematics, and writing, Catholic school students scored about .1 standard deviation higher than students in public schools with comparable family backgrounds and sophomore achievement. In science and civics, the effects of Catholic schooling on achievement did not appear to be statistically significant.

The debate concerning these results was primarily rhetorical. Both Willms and Alexander and Pallas (1983) claimed that .1 standard deviation represents a trivial gain. Coleman and Hoffer (1987) noted that given the scores of seniors in the 1980 survey, this gain represents approximately one grade equivalent. Thus, if the gains from Catholic schooling between the eighth and tenth grades are the same as the gains between tenth and twelfth, amending four years of Catholic high school generates a .2 standard deviation increase in achievement. In terms of public school grade equivalent, Catholic schools would, in some subjects, offer six years of achievement for four years of attendance.

Coleman and Hoffer (1987) also found that the effects of Catholic schooling on achievement growth are greatest for *minority* students and students from economically and socially disadvantaged backgrounds. Given the standard errors reported by the authors, however, these differences are not statistically significant in many instances.

Although the analyses of achievement in the first follow-up survey provided controls for prior achievement, the results may still be contaminated by selection bias. Holding current achievement constant, students who are highly motivated may still be more likely to attend private

schools. Coleman and Hoffer (1987) did perform tests for selection bias using the follow-up data and found little evidence that selection bias contaminated their results.

More recently, researchers have begun analyzing data from the 1988 National Educational Longitudinal Study. This panel study began with a cohort of students who were finishing eighth grade in the spring of 1988. Taken together, the 1988 survey and subsequent follow-up surveys provide achievement test scores for eighth, tenth, and twelfth graders. Figlio and Stone (1997) conducted an analysis of these achievement data. Given their strategy of correcting estimates for selection bias, they find that private schools with a religious affiliation do not enhance achievement in the population as a whole or within most subgroups. However, the authors do report large achievement gains for blacks and Hispanics who attend private religious schools, and they report the largest gains for blacks and Hispanics who live in large, central cities.⁵

A 1990 case study by RAND supports the claim that minority youth in large cities benefit from Catholic Schooling. Hill, Foster, and Gendler (1990) compare regular public schools, magnet schools, and Catholic Schools in inner-city neighborhoods in New York City. They also gathered data from some inner-city schools in Washington, D.C. The authors focused their data collection on eight New York City schools that all contain substantial numbers of minority students and students from economically disadvantaged families. The study devotes particular attention to students who attended Catholic schools through a privately funded scholarship program. According to the authors, "most scholarship recipients are black or Puerto Rican.... They tend to come from single-parent welfare homes and have poor scholastic records."

Although many scholarship students entered Catholic school performing below grade level, 82 percent graduated. This figure compares with 55 percent in the regular public schools and 66 percent in the representative magnet school. Further, 85 percent of the scholarship students took the Scholastic Aptitude Test; on average, they scored almost as well as the students who paid to attend the Catholic schools. They also scored an average of almost

90 points higher than the 50 percent of magnet school students who took the test and 160 points higher than the 33 percent who took the test in regular public schools. Obviously, these findings only provide information about a small set of schools in one city. However, they are part of a notable pattern of results in the literature.

ADDITIONAL DATA: VOUCHER PROGRAMS

So far, I have largely restricted my attention to studies comparing Catholic and public schools. This perspective reflects the fact that a large fraction of private secondary schools are Catholic schools and that the balance of the private secondary school market is quite heterogeneous. No other relatively homogeneous group of private schools is well represented in data sets that provide student background characteristics as well as individual achievement and attainment data. Further, samples of minority students in secular private schools are usually quite small.

However, in recent years a set of studies concerning achievement in private elementary schools and dealing with a large sample of minority students has received a great deal of attention. In 1990, the city of Milwaukee provided a limited number of vouchers for low-income families. These vouchers, worth roughly \$2,500 each, could be used at private secular elementary schools. The data from the follow-up studies contribute interesting information to the debates over the relative effectiveness of private versus public schools. Because the program did not provide vouchers for every family that applied to the program, the data cover families that wanted to participate but were not permitted to do so. Thus, the data provide a natural comparison group for the students who attended private schools under the program.

Unfortunately, different researchers have drawn different conclusions from analyses of the Milwaukee data. I will not go further into this debate here because another paper in this volume (Rouse 1998) addresses the issues at length. Nonetheless, a recent paper by Rouse (forthcoming) does provide credible evidence that access to private education increased the math scores of program participants, although Rouse finds no evidence of positive effects on reading achievement.

POLICY IMPLICATIONS

Any regular C-SPAN viewer knows that scholars and policymakers often talk past one another and that on any given topic the conventional wisdom among politicians may not coincide with the opinions of the majority of scholars who work on the topic. However, when I look at the academic literature on the benefits of private schooling, I see themes that are also common in newspaper and magazine articles concerning proposals for school reform.

The most compelling evidence for positive private school effects comes from analyses of minority youth in cities. Further, if for no other reason than data availability, this is particularly true with respect to Catholic school effects. Given this result, it is interesting to note that many privately funded voucher programs and most proposals for publicly funded vouchers target minority youth in large cities and, in many instances, minority youth in large cities with a significant number of Catholic schools.

A recent issue of *Time* magazine profiled a privately funded voucher program in Philadelphia. Last year, John Cardinal O'Connor touched off considerable debate by offering to take the lowest performing 5 percent of New York's public school students out of overcrowded public schools and place them in Catholic schools. In exchange, the Cardinal asked the city to provide \$2,500 per student. In 1996, Cleveland began the first state-funded voucher plan that included religious schools.

Given the recent flurry of voucher proposals targeted toward inner-city youth, it is interesting to ask whether or not the existing evidence supports the hypothesis that voucher plans will be successful. I believe two words of caution are in order.

First, none of the studies discussed above fully deals with the fact that some students may be better suited for Catholic schools than others. It is hard to find evidence that urban Catholic school students are simply better students than their public school counterparts on some unobserved dimension. However, existing Catholic school students may be the students who have the most to gain from Catholic schooling. We may be safe in concluding that Catholic schools provide real benefits for their current students. Much harder to ascertain is

how many other students would benefit from Catholic schooling if given the opportunity. Would students from Muslim families benefit from Catholic schooling! Given available data, we cannot answer this question. At best, we may expect significant benefits from Catholic schooling for students who are quite similar to the existing population of Catholic school students.

However, even if we consider a voucher program aimed at inner-city neighborhoods where Catholic or other private schools already succeed, we cannot confidently expect positive outcomes for program participants if the program is large in scale. For the outside observer, it is hard to know exactly what makes some schools succeed while others fail. Large school voucher programs would likely mean the expansion of many existing private schools and the entry of many new private schools. How would this expansion and entry affect the quality of private schools or the quality of remaining public schools? I do not know, and available data shed little light on this question.

Nonetheless, I see no reason to be wary of small-scale voucher plans that target disadvantaged students in large cities. Small-scale plans should not affect the current function of either private or public schools. Moreover, by targeting vouchers toward economically disadvantaged students in cities, we would aid students who currently receive poor service from public schools.

FUTURE RESEARCH AND RELATED POLICY CONCERNS

I have argued that some students benefit more from private schooling than others simply because the public schools available to them are worse than those available to others. The notion of "available public schools" is problematic, however, because families choose where they live and thus choose the schools that are available.

Although existing research tells us little about how families make the joint decision of where to live and where to send their children to school, a recent paper by Nechyba (1997) points to the potential payoffs of such research. Nechyba constructs a simulation model that explores what might happen in terms of school choices and residential location choices under a full-scale voucher system. His most interesting result is that an important link between school choice and residential location exists. In his simulations, a voucher program may reduce residential segregation by income class. An elastic supply of private schools makes it possible for people to uncouple school choice and place of residence. Families can live near their jobs and let good schools come to them. Nechyba's paper raises the possibility that a broad-based voucher program might also serve as an urban renewal program. How many commuters would decide to live in the cities where they work if they could use vouchers to choose from a menu of private schools? This is a question worthy of further investigation.

ENDNOTES

The author thanks the Andrew Mellon Foundation for supporting his research on Catholic schooling.

1. Sander and Krautmann (1995) present results that are *similar in* several respects to those of Evans and Schwab.

2. See Coleman and Hoffer (1987, p. 131). However, given Coleman and Hoffer's method of presenting results, it is difficult to determine whether or not the differences in gaps across groups are statistically significant.

3. In their analyses, which correct for selection bias, Evans and Schwab (1995) also report slightly larger Catholic school effects for blacks than for whiter. However, the differences are small and statistically insignificant.

4. A great portion of the debate took place in three issues of the *Sociology of Education* in 1982, 1983, and 1985. My references contain several articles from these issues. Murnane (1981) provides a review of much of the literature that deals with the original Coleman, Kilgore, and Hoffer report. Heckman and Neal (1996) also review this literature.

5. The exact magnitude of the achievement gains varies with grade level and econometric specification. However, the estimated effects are always large for urban minorities. As an example, a standard analysis of the tenth-grade math scores yields a 7 percent gain in achievement from Catholic schooling for blacks in cities.

REFERENCES

- Alexander, Karl L., and Aaron M. Pallas. 1983. "Private Schools and Public Policy: New Evidence on Cognitive Achievement in Public and Private Schools." *SOCIOLOGY OF EDUCATION* 56:170-81.
- . 1985. "School Sector and Cognitive Performance: When Is a Little a Little?" *SOCIOLOGY OF EDUCATION* 58:115-28.
- Coleman, James, and Thomas Hoffer. 1987. *PUBLIC AND PRIVATE SCHOOLS: THE IMPACTS OF COMMUNITIES*. New York: Basic Bwks.
- Coleman, James, Sally Kilgore, and Thomas Hoffer. 1981. *PUBLIC AND PRIVATE HIGH SCHOOLS*. Washington, D.C.: National Center for Educational Statistics.
- Evans, William, and Robert Schwab. 1995. "Finishing High School and Starting College: Do Catholic Schools Make a Difference?" *QUARTERLY JOURNAL OF ECONOMICS* 110:947-74.
- Figlio, David N., and Joe A. Stone. 1997. "School Choice and Student Performance: Are Private Schools Really Better?" Institute for Research on Poverty Discussion Paper no. 1141-97.
- Goldberger, Arthur S., and Glenn G. Cain. 1982. "The Causal Analysis of Cognitive Outcomes in the Coleman, Hoffer, and Kilgore Report." *SOCIOLOGY OF EDUCATION* 55:103-22.
- Greene, Jay P., Paul E. Peterson, and Jiangtao Du. 1987. "Effectiveness of School Choice: The Milwaukee Experiment." Harvard University Program in Education Policy and Governance Paper no. 97-1.
- Heckman, James. 1997. "Instrumental Variables: A Study of Implicit Behavioral Assumptions in One Widely Used Estimator." *JOURNAL OF HUMAN RESOURCES* 32:441-62.
- Heckman, James, and Derek Neal. 1996. "Coleman's Contributions to Education: Theory, Research Style, and Empirical Research." In Jon Clark, ed., *JAMES S. COLEMAN*. London: Falmer Press.
- Heckman, James, and Richard Robb. 1985. "Evaluating the Impact of Treatments on Outcomes." In J. Heckman and B. Singer, eds., *LONGITUDINAL ANALYSIS OF LABOR MARKET DATA*. Cambridge: Cambridge University Press.
- Hill, Paul T., Gail E. Foster, and Tamar Gendler. 1990. "High Schools with Character." RAND R-3944-RC.
- Murnane, Richard J. 1981. "Evidence, Analysis, and Unanswered Questions." *HARVARD EDUCATIONAL REVIEW* 51:483-9.
- Murnane, Richard J., Stuart Newstead, and Randall J. Olsen. 1985. "Comparing Public and Private Schools: The Puzzling Role of Selection Bias." *JOURNAL OF BUSINESS AND ECONOMIC STATISTICS* 3:23-35.
- Neal, Derek. 1997. "The Effect of Catholic Secondary Schooling on Educational Attainment." *JOURNAL OF LABOR ECONOMICS* 15:98-123.
- Nechyba, Thomas J. 1997. "Public School Finance in a General Equilibrium Tiebout World." Unpublished paper, Stanford University.
- Noell, John. 1982. "Public and Catholic Schools: A Reanalysis of Public and Private Schools." *SOCIOLOGY OF EDUCATION* 55:123-32.
- Rouse, Cecilia Elena. 1998. "Schools and Student Achievement: More Evidence from the Milwaukee Parental Choice Program." Federal Reserve Bank of New York *ECONOMIC POLICY REVIEW* 4, no. 1.
- . Forthcoming. "Private School Vouchers and Student Achievement: An Evaluation of the Milwaukee Parental Choice Program." *QUARTERLY JOURNAL OF ECONOMICS*.
- Sander, William. 1997. "Catholic High Schools and Rural Academic Achievement." *AMERICAN JOURNAL OF AGRICULTURAL ECONOMICS* 79:1-12.
- Sander, William, and Anthony Krautmann. 1995. "Catholic Schools, Dropout Rates, and Educational Attainment." *ECONOMIC INQUIRY* 33:217-33.
- Willms, J. Douglas. 1985. "Catholic-School Effects on Academic Achievement: New Evidence From the High School and Beyond Follow-Up Study." *SOCIOLOGY OF EDUCATION* 58:98-114.
- Witte, John F. 1992. "Private School versus Public School Achievement: Are There Findings that Should Affect the Educational Choice Debate?" *ECONOMICS OF EDUCATION REVIEW* 11:371-94.