

Funding Students Instead of Systems

The Economic Impacts of Statewide Education Savings Accounts in North Carolina

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Preface

Coronavirus has upended instruction for thousands of students in North Carolina and left many parents concerned about their child's educational needs. The latest data from Education Week estimates that 60 percent of the public schools in North Carolina reopened without any in-person instruction. The public school's version of remote learning has been a disaster for too many families.

The problem is families are essentially powerless when it comes to K-12 education. The public-school system is a monopoly that lacks meaningful incentives to cater to the needs of families.

The good news is that a solution exists: we could fund students instead of institutions, just like we already do with other taxpayer-funded initiatives like Pell Grants and the G.I. Bill for higher education and pre-K programs.

While much of the education landscape is not a pretty picture, innovation is happening. Families are pooling resources together to form "[pandemic pods](#)" or "[micro-schools](#)" where parents help to supervise instruction and also may hire teachers or tutors to facilitate learning.

Private schools have been nimble in responding to a changing environment; but many public schools have not; and students lack access to these new solutions. The difference is clear: one of these sectors gets your money regardless of how well they meet the needs of individual families. One of these sectors is also hampered by government regulations, making it difficult even for the most well-intentioned school leaders to adapt.

We need to change how North Carolina finances schools. One step we can take is to allow families to take their children's education dollars to wherever they receive an education – whether it be a public school, private school, homeschool, or micro-school. Funding students directly through a statewide education savings account (ESA) is the best way to make that happen.

A recent Civitas/Reason study evaluated the economic impacts of funding students directly through a statewide ESA in North Carolina. The outcomes are promising. The study found a statewide ESA would:

- Produce \$19 billion in economic benefits from higher lifetime earnings associated with increases in academic achievement.
- Generate \$790 million in economic benefits from additional high school graduates and \$12 million from reductions in social costs associated with crimes.
- Produce even greater benefits if enrollment expands by a conservative 1 percent per year. In ten 10 years (2030-31), benefits would grow to \$58 billion in economic benefits from higher lifetime earnings; \$2.4 billion in economic benefits from additional high school graduates and \$35 million from reductions in the social costs associated with crime.
- Provide taxpayer savings of potentially \$115 million in one year.

These are difficult times for North Carolina families. Our current system of funding schools puts the needs of institutions before the needs of students.

ESAs rightfully elevate the educational needs of each child over the needs of a system. By linking funding to the child, parents are empowered to access the best educational option for their child while generating significant economic benefits and boosting positive social and civic outcomes.

Lawmakers have time to correct this problem . The following study points a way forward how North Carolina can expand educational opportunity and improve economic and social outcomes.

A special thanks to Dr. Corey DeAngelis, for his work on this project and all his efforts to expand educational opportunity in North Carolina and across the United States. Our families and our children thank you.

Best,

Dr. Bob Luebke
Director of Policy
Civitas Institute

**Funding Students Instead of Systems: The Economic Impacts of Statewide Education
Savings Accounts in North Carolina**

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Executive Summary

The Coronavirus pandemic of 2020 has made one thing clearer than ever: families have been getting the short end of the stick when it comes to K-12 education. Far too many public school districts did not adapt well to remote instruction in the spring, and an overwhelming majority of the country's largest districts are not planning to reopen schools for full-time in-person instruction in the fall. In North Carolina, for example, none of the 15 public school districts tracked by Education Week have decided to reopen with full-time in-person instruction this fall.¹ Although thousands of families are pooling their resources together to form “pandemic pods,” or micro schools, disadvantaged families might not have the resources to pursue these options. But allowing education funding to follow the child to wherever they receive an education would allow more families to have access to these alternatives. At the same time, funding students directly would empower families and give schools and other providers of educational services stronger incentives to meet their needs.

But how would funding students directly impact broader society—and what does the preponderance of the evidence say about the topic? This study reviews the most rigorous evidence on the effects of private school choice on short- and long-term outcomes such as academic achievement, educational attainment, crime reduction, safety, and satisfaction. This study also forecasts the long-run economic benefits of funding North Carolina students directly, instead of school systems, with a statewide education savings account program available to all families.

Applying cautious estimates from each outcome (academic achievement, educational attainment, and crime reduction) to the 77,510 students estimated to use the program in the first

¹ School Districts' Reopening Plans: A Snapshot. Education Week. Retrieved from <https://www.edweek.org/ew/section/multimedia/school-districts-reopening-plans-a-snapshot.html>

year, this study finds that expanding access to education savings accounts in North Carolina would be expected to provide the following long-run economic benefits:

- \$19 billion in economic benefits from higher lifetime earnings associated with increases in academic achievement
- \$790 million in economic benefits from additional high school graduates
- \$12 million from reductions in the social costs associated with crimes

Assuming a one percentage point increase in program enrollment per year, this study projects the following long-run economic benefits from the 232,530 students expected to use education savings accounts by the 2030-31 school year:

- \$58 billion in economic benefits from higher lifetime earnings associated with increases in academic achievement
- \$2.4 billion in economic benefits from additional high school graduates
- \$35 million from reductions in the social costs associated with crimes

These potential economic benefits should not be combined and should be assessed separately because of overlap. For example, higher academic achievement increases the likelihood of high school graduation, and receiving a high school diploma reduces the likelihood of incarceration. It is also possible that results would differ in North Carolina based on context, geographic location, and implementation. Readers should therefore exercise considerable caution when examining these types of economic forecasts.

Keywords: private school; school choice; economics of education; charter schools

JEL Codes: I28; I20

Introduction

Students are generally assigned to a traditional public school based on their residence. This residential assignment, in addition to compulsory funding through taxes, creates a large degree of monopoly power in the K-12 education system in the U.S. If a family is dissatisfied with their child's residentially assigned public school, they generally only have a few costly or ineffective options. They can move to a residence that is assigned to a better district-run public school, pay for a private school out of pocket while still paying for the district-run public school through property taxes, incur the costs of homeschooling while still paying for the district-run public school through property taxes, or negotiate with school leaders and teachers to try to improve the education their child receives. Because each of these options is costly or ineffective, traditional public schools generally have little incentive to cater to the needs of individual families (Chubb & Moe, 1988; Friedman, 1955; DeAngelis, 2018; Hoxby, 2007).

Allowing education dollars to follow the student empowers families and gives education providers stronger incentives to meet their needs (DeAngelis & Holmes Erickson, 2018). Private providers might also have a competitive advantage at meeting the needs of their customers because they are less likely to be hampered by onerous government regulations (Shakeel & DeAngelis, 2017). These differences in incentives and autonomy might explain the differential response of various school sectors to the lockdown, which has affected over 55 million K-12 students in the U.S. so far in 2020.² A recent report by the Center for Reinventing Public Education, for example, found that only one in three public school districts examined required teachers to deliver instruction during the lockdown.³ A nationally representative survey by

² Map: Coronavirus and School Closures. Education Week. Retrieved from <https://www.edweek.org/ew/section/multimedia/map-coronavirus-and-school-closures.html>

³ Lake, R., Gross, B., & Opalka, A. (2020). Analysis: Just 1 in 3 Districts Required Teachers to Deliver Instruction This Spring. They Mustn't Be Left on Their Own Again in the Fall. The 74 Million. Retrieved from

Education Next found that private and charter school teachers were over twice as likely to meet with students each day than teachers at traditional public schools.⁴ In addition, the Education Next survey found that parents of students in private and charter schools were at least 50 percent more likely to report being “very satisfied” with the instruction provided during the lockdown than parents of children in traditional public schools.⁵ And although private businesses such as schools and daycares are pushing to reopen in the fall, many public school systems are fighting to remain closed. In fact, 84 percent of the 25 largest public-school districts in the U.S. are not planning to reopen in person this fall.⁶

These results make sense. Private and charter schools know that families can take their money elsewhere if they do not meet their needs. If a local grocery store does not reopen, families can take their money elsewhere, even if they are using taxpayer funding. If a school does not reopen, families should similarly be able to take their children’s education dollars elsewhere. As a matter of fact, even if a school does reopen, families should be able to take their children’s education dollars elsewhere. The money is supposed to be meant for the education of the child—not protecting a government monopoly.

North Carolina families currently have some limited access to educational choice. The state enacted a law allowing for public charter schools in 1996. In 2018-19 there were around 184 public charter schools in the state serving over 111,600 students, or about 6 percent of the

<https://www.the74million.org/article/analysis-just-1-in-3-districts-required-teachers-to-deliver-instruction-this-spring-they-mustnt-be-left-on-their-own-again-in-the-fall/>

⁴ Henderson et al. (2020). What American Families Experienced When Covid-19 Closed Their Schools. Education Next. Retrieved from <https://www.educationnext.org/what-american-families-experienced-when-covid-19-closed-their-schools/>

⁵ DeAngelis (2020). Private Schools Are Adapting to Lockdown Better Than the Public School Monopoly. Reason Magazine. Retrieved from <https://reason.com/2020/07/17/private-schools-are-adapting-to-lockdown-better-than-the-public-school-monopoly/>

⁶ School Districts' Reopening Plans: A Snapshot. Education Week. Retrieved from <https://www.edweek.org/ew/section/multimedia/school-districts-reopening-plans-a-snapshot.html>

school-aged population.⁷ The state has two private school choice options that are available for students with special needs. These two programs served around 2,000 students in the 2018-19 school year and around 10 percent of the students in the state are eligible to access them.

The state's largest private school choice program—the Opportunity Scholarship Program—served around 12,000 students from low-income households in the 2018-19 school year. Students who previously attended public schools are eligible for this program if their household income does not exceed 133 percent of the federal lunch program eligibility amount, which is \$63,358 for a family of four. This means that about 44 percent of North Carolina families with children are eligible to access the program, which is funded at around \$3,936 per child per year, or about 60 percent less than the amount spent per child in K-12 public schools in the state each year. Private schools that accept students using this program must administer nationally norm-referenced standardized tests and report test results and graduation rates to the state.

Although North Carolina has three private school choice programs available to families, each is fairly limited in size. Only about a half of a percent of the school-aged population uses a private school choice program in the state, whereas over six times that proportion access private school choice programs in states such as Florida, Arizona, and Wisconsin.⁸ The state could expand access to education choice by allowing all students to be eligible for an education savings account, regardless of their backgrounds. A substantial portion of the amount that would have been spent on their education in traditional public schools could follow the child to wherever

⁷ Highlights of the North Carolina Public School Budget 2019, Retrieved from: <https://files.nc.gov/dpi/documents/fbs/resources/data/highlights/2019highlights.pdf> North Carolina Private School Statistics 2019, North Carolina Home School Statistical Summary 2019. Statistics for Home School and Private Schools, available from Office of Nonpublic Education.

⁸ Catt, D. (2019). U.S. states ranked by educational choice share, 2019. Retrieved from <https://www.edchoice.org/engage/u-s-states-ranked-by-educational-choice-share-2019/>

they receive an education—be it a public school, charter school, private school, or home school. If only three-quarters of the funding follows the child to the educational setting of their choice, that would be around \$7,448 per child per year, or around 77 percent higher than the maximum funding amount allocated to students using the Opportunity Scholarship Program.

This statewide education savings account program would fund students instead of school systems, which is how several other taxpayer-funded initiatives are already structured. Higher education funding for Pell Grants and the GI Bill goes to individual students who can then use those dollars at public or private universities of their choosing. Funding for Pre-K programs often goes to individual families who can then use those dollars at public or private providers of their choosing. Funding for food stamps goes to individual families. Individual families can choose to spend their food stamp dollars at various private providers such as Harris Teeter, Walmart, Whole Foods, Trader Joe's, and Safeway.

Just imagine if families were forced to use their food stamp dollars at residentially assigned government grocery stores. That would be absurd. But that is essentially how K-12 education funding is structured today. Instead of funding institutions, we should fund students directly and empower all families to choose the educational options that work best for their own children. Funding students directly would lead to more equity in education as well. More families would have access to educational options such as private schooling, homeschooling, and microschooling. Furthermore, less-advantaged students are theoretically more likely to benefit from educational options because they tend to be residentially assigned to lower-quality traditional public schools.

But what does the evidence say about expanding access to private school choice programs? And how would funding students instead of systems impact broader society? This

report reviews the rigorous evidence linking access to school choice programs to academic achievement, academic attainment, criminal activity, civic engagement, safety, and satisfaction. This study also forecasts the economic benefits associated with improvements in these outcomes that would be expected to occur with education savings accounts for all North Carolina families. The next three sections forecast the effects of universal education savings accounts on academic achievement, graduation rates, and crime, and estimate the economic implications in terms of dollars and cents.

Academic Achievement

The latest peer-reviewed study of the academic impacts of a statewide private school choice program in North Carolina found substantial positive effects on students' math and language test scores. In particular, Egalite, Stallings, and Porter (2020) found that access to the North Carolina Opportunity Scholarship Program was associated with a 36 percent of a standard deviation increase in math test scores and a 44 percent of a standard deviation increase in language test scores. However, the evaluation did not find a statistically significant effect of the program on reading test scores. It's also worth noting that this school choice program produced positive results despite the fact that the average funding amount (\$3,936) is around 60 percent less than the average per pupil funding amount in traditional public schools (\$9,931) in the state.⁹

Although this study found large academic benefits of a private school choice program in North Carolina, it is important to review the more rigorous random assignment evaluations on the topic as well. Similar to rigorous medical trials, random assignment evaluations of school choice programs largely eliminate selection bias because all families in the treatment and control

⁹ North Carolina – Opportunity Scholarships. EdChoice. Retrieved from <https://www.edchoice.org/school-choice/programs/north-carolina-opportunity-scholarships/>

groups chose to enter the lottery. Given a large enough sample size, and effective random assignment, the groups of winners and losers of the lottery are, on average, roughly equivalent on all observable and unobservable characteristics such as income, family structure, and motivation.

Two of the 17 random assignment studies linking private school choice programs in the U.S. to academic achievement examined outcomes for students in North Carolina—and both found statistically significant positive effects (Cowen, 2008; Greene, 2000). Cowen (2008), for example, found that winning a lottery to use a voucher to attend a private school in Charlotte, North Carolina increased math scores by 7 points and reading scores by 8 points. Greene (2000) similarly found that winning a lottery to use a voucher to attend a private school in Charlotte increased math scores by 6 points and reading scores by 7 points. Shakeel, Anderson, and Wolf (2016) reported that these positive effects observed in Charlotte were around 16 percent of a standard deviation in math and around 22 percent of a standard deviation in reading.

The majority of the 17 random assignment studies on the topic find some evidence of positive effects on students' math or reading test scores (DeAngelis & Wolf, 2019b; EdChoice, 2020; Egalite & Wolf, 2016; Wolf & Egalite, 2019). Specifically, 10 of the 17 experimental studies detect statistically significant positive effects on math or reading test scores overall or for student subgroups (Barnard et al., 2003; Cowen, 2008; Greene, 2000; Greene et al., 1999; Jin et al., 2010; Howell et al., 2002 (three locations); Rouse, 1998; Wolf et al., 2013).

Four of the 17 studies do not detect any statistically significant effects on test scores (Bettinger & Slonim, 2006; Bitler et al., 2013; Krueger & Zhu, 2004; Webber et al., 2019). However, because private school vouchers are publicly funded at substantially lower amounts than per pupil spending in district-run public schools, statistically insignificant results imply a positive return-on-investment for taxpayers (DeAngelis, 2019a; Shakeel, Anderson, & Wolf,

2017). In the District of Columbia, for example, the average voucher amount is only about \$9,531 per year,¹⁰ whereas per pupil spending in district-run public schools is about \$28,000 each year.¹¹ In other words, the latest evaluation of the D.C. voucher program found that the private schools achieved the same math and reading results as the public schools at around a third of the cost (Webber et al., 2019).¹² Only two of the 17 studies, both of the highly regulated Louisiana Scholarship Program, find negative effects on math or reading test scores (Abdulkadiroğlu, Pathak, & Walters, 2018; Mills & Wolf, 2019).¹³ One study found mixed results (Lamarche, 2008).

Shakeel, Anderson, and Wolf (2016) conducted a meta-analysis including 15 of these experimental evaluations and concluded that private school choice programs increased or had no effect on academic achievement in the United States. The overall average math and reading effect sizes across all studies, calculated by Shakeel, Anderson, and Wolf (2016), ranged from zero percent of a standard deviation to seven percent of a standard deviation. Betts and Tang (2019) similarly performed a systematic review and meta-analysis of 38 rigorous studies and found that public charter schools increased reading achievement by 2 percent of a standard deviation and increased math achievement by 3.3 percent of a standard deviation. Zimmer et al. (2019) also recently summarized the random assignment evaluations of public charter schools and similarly concluded that “lottery-based analyses have generally shown strong positive effects on student achievement of charter school admission and enrollment.”

¹⁰ School Choice – District of Columbia Opportunity Scholarship Program. EdChoice. Retrieved from <https://www.edchoice.org/school-choice/programs/district-of-columbia-opportunity-scholarship-program/>

¹¹ Revenues and Expenditures for Public Elementary and Secondary Education: School Year 2014–15 (Fiscal Year 2015). National Center for Education Statistics. Retrieved from <https://nces.ed.gov/pubs2018/2018301.pdf>

¹² DeAngelis, C. A. (2019). School choice works – for a third of the cost. Washington Examiner. Retrieved from <https://www.washingtonexaminer.com/opinion/school-choice-works-for-a-third-of-the-cost>

¹³ DeAngelis, C. A. (2019). Look deeper into school voucher outcomes. The Advocate. Retrieved from https://www.theadvocate.com/baton_rouge/opinion/article_b717848e-6780-11e9-889f-dbedfb59cd48.html

In order to connect the potential achievement effects of private school choice in North Carolina to changes in lifetime earnings, I combine the academic achievement literature with findings from Stanford University economist Eric Hanushek. Hanushek (2011) observed that a one standard deviation increase in student achievement is associated with a 13 percent increase in lifetime earnings.¹⁴ Following the methodology from previous evaluations (e.g., DeAngelis, 2018; DeAngelis et al., 2019; DeAngelis & DeGrow, 2018; DeAngelis & Flanders, 2018; Wolf et al., 2014), because 70 percent of learning is retained from one year to the next (Hanushek, 2011), it is possible to forecast the potential effects of private school choice programs on lifetime earnings.

Using the more cautious estimate of the effects of private school choice in North Carolina on student achievement reported by Shakeel, Anderson, and Wolf (2016) (a 16 percent of a standard deviation positive effect on math scores), the following two equations can be used to forecast the possible effects of private school choice on lifetime earnings in North Carolina:

$$\text{Avg Lifetime Earnings} * [1 + (0.16) * (0.13/SD) * (0.70)]^{13} = \textbf{Expected Lifetime Earnings} \quad (1)$$

$$\text{Expected Lifetime Earnings} - \text{Avg Lifetime Earnings} = \textbf{Gain in Lifetime Earnings} \quad (2)$$

To calculate the net present value of lifetime earnings in 2020 dollars, I assume that each student will work for 46 years, or from the age of 25 to the age of 70. Using a discount rate of 3 percent, and the average wage in North Carolina in 2019 (\$48,550)¹⁵ from the U.S. Department of Labor Bureau of Labor Statistics, the net present value of the average lifetime earnings in North Carolina is \$1,208,083. This number is the best approximation available for the expected lifetime

¹⁴ Chetty, Friedman, and Rockoff (2014) found similar results to Hanushek (2011). The estimated relationship between academic achievement and lifetime earnings found by Chetty, Friedman, and Rockoff (2014) only differed from Hanushek (2011) by around two-percentage points.

¹⁵ May 2019 State Occupational Employment and Wage Estimates – North Carolina. Bureau of Labor Statistics. United States Department of Labor. Retrieved from https://www.bls.gov/oes/current/oes_nc.htm

earnings of individuals educated in district-run public schools in the state since over 80 percent of students attend public schools in North Carolina.¹⁶

Plugging this information into equation (1) produces an expected lifetime earnings of \$1,457,831 for students attending private schools for their entire K-12 education. Plugging this information into equation (2) produces an expected gain in lifetime earnings of \$249,748 for each child using a private school choice program in the state.

$$\$1,208,083 * [1 + (0.16) * (0.13/SD) * (0.70)]^{13} = \textbf{\$1,457,831} \quad (1)$$

$$\$1,457,831 - \$1,208,083 = \textbf{\$249,748} \quad (2)$$

According to the National Center for Education Statistics, 1,550,200 students were projected to be enrolled in public K-12 schools in North Carolina in the 2020-21 school year.¹⁷ Assuming 5 percent of that population of students used a statewide education savings account program, that would be 77,510 students benefiting from additional educational options.¹⁸ An additional \$249,748 in lifetime earnings for each of the students accessing the program would amount to an economic benefit of about \$19.4 billion (77,510 x \$249,748). If an additional one percent of the school-aged population takes advantage of the education savings account program each year, then 155,020 students would benefit from the program by 2025 and 232,530 students would benefit from the program by 2030. The additional academic achievement experienced by these students are estimated to lead to an additional \$58.1 billion in lifetime earnings for students using the program by 2030 (232,530 x \$249,748). These projected results can be found in Table 1 and

¹⁶ Catt, D. (2020). U.S. states ranked by educational choice share, 2019. EdChoice. Retrieved from <https://www.edchoice.org/engage/u-s-states-ranked-by-educational-choice-share-2019/>

¹⁷ Enrollment in public elementary and secondary schools. Table 203.20. National Center for Education Statistics. Retrieved from https://nces.ed.gov/programs/digest/d19/tables/dt19_203.20.asp?current=yes

¹⁸ The 5 percent participation rate is based on data from the D.C. Opportunity Scholarship Program when it was launched in 2004-05 and the Milwaukee Parental Choice Program when it was expanded in 1998-99 (DeAngelis & Wolf, 2016; Wolf et al., 2008; Wolf, 2012).

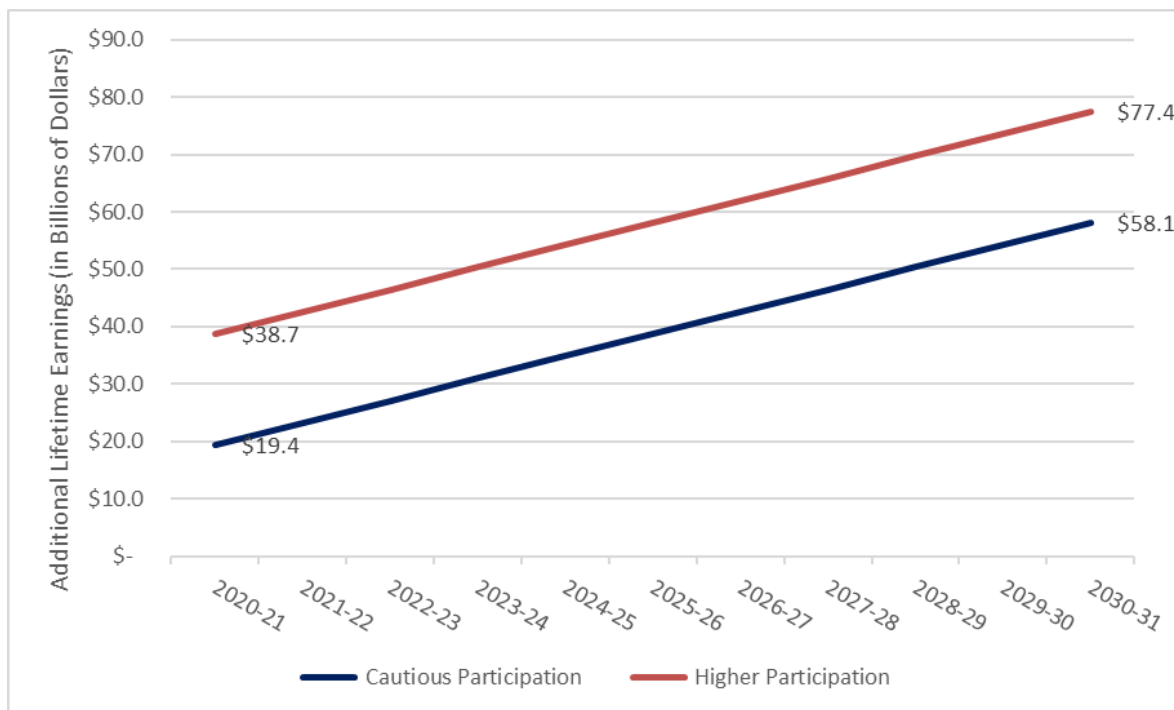
Figure 1. Results are also reported for a model based on a higher program participation rate of 10 percent of the population of K-12 students in the first year (Columns 4 and 5 in Table 1).

Table 1: Projected Increases in Enrolled Students and Lifetime Earnings

Year	Cautious Participation		Higher Participation	
	Students	Additional Lifetime Earnings (Billions of 2020 Dollars)	Students	Additional Lifetime Earnings (Billions of 2020 Dollars)
2020-21	77,510	\$19.4	155,020	\$38.7
2021-22	93,012	\$23.2	170,522	\$42.6
2022-23	108,514	\$27.1	186,024	\$46.5
2023-24	124,016	\$31.0	201,526	\$50.3
2024-25	139,518	\$34.8	217,028	\$54.2
2025-26	155,020	\$38.7	232,530	\$58.1
2026-27	170,522	\$42.6	248,032	\$61.9
2027-28	186,024	\$46.5	263,534	\$65.8
2028-29	201,526	\$50.3	279,036	\$69.7
2029-30	217,028	\$54.2	294,538	\$73.6
2030-31	232,530	\$58.1	310,040	\$77.4

Source: Author's calculations

Figure 1: Projected Increase in Lifetime Earnings (in Billions of 2020 Dollars)



Source : Author's calculations

Notably, these estimates of economic benefits are based on the cautious estimates found in the experimental evaluations by Greene (2000) and Cowen (2008) rather than the larger positive results found in North Carolina by Egalite, Stallings, and Porter (2020). However, the estimates of economic benefits reported in this section should still be assessed with caution because effects on standardized test scores may not always be strong proxies for effects on lifetime earnings. Although studies such as Hanushek (2011) and Chetty, Friedman, Rockoff (2014) suggest that higher standardized test scores tend to be associated with higher earnings, two reviews of the school choice literature suggest that schools' effects on standardized test scores often do not successfully predict their effects on long-term outcomes such as educational attainment (DeAngelis, 2019; Wolf, Hitt, & McShane, 2018).

Educational Attainment

Educational attainment includes high school graduation, college enrollment, college persistence, and college completion. The evidence linking private school choice programs to these educational attainment outcomes leans positive. Foreman (2017) reviewed this evidence and found that all five studies on the subject indicated statistically significant positive effects of private school choice programs on at least one educational attainment outcome overall or for subgroups of students. EdChoice (2020) similarly found that four out of six rigorous studies on the subject indicated attainment benefits of private school choice programs in the U.S. overall or for student subgroups. None of the reviewed studies found negative effects of private school choice programs on attainment outcomes overall or for student subgroups.

Most recently, DeAngelis and Wolf (2019b) reviewed the literature on private school choice and educational attainment and found eight rigorous evaluations on the subject. Six of the

eight evaluations found statistically significant positive effects of private school choice programs on at least one measure of educational attainment overall or for student subgroups (Cheng, Chingos, & Peterson, 2019; Chingos, Monarrez, & Kuehn, 2019; Chingos & Peterson, 2015; Cowen et al., 2013; Wolf et al., 2013; Wolf, Witte, & Kisida, 2019). For example, Wolf et al. (2013) found that winning a lottery to use a voucher to attend a private school in D.C. increased the likelihood of graduating from high school by 21 percentage points. Cowen et al. (2013) found that students using the Milwaukee Parental Choice Program were about 4 percentage points more likely to graduate from high school than their carefully matched peers in public schools. The two remaining evaluations did not find any statistically significant effects of school choice on educational attainment overall in Louisiana (Holmes Erickson, Mills, & Wolf, 2019) or the District of Columbia (Chingos, 2018).

It is possible to forecast expected economic benefits associated with access to private school choice in North Carolina by linking these estimates to information about the economic value of additional high school graduates. High school graduates produce economic benefits to society through higher productivity, additional tax revenues from higher earnings, and reductions in social costs associated with tax-funded healthcare, crime, and welfare (Levin, 2009). Levin (2009) estimated the present value of economic benefits associated with an additional high school graduate was \$209,100 in 2009 dollars. Levin's (2009) estimates of these economic benefits were derived from expected increases in tax revenues and decreases in social costs associated with crime, healthcare, and welfare. According to the U.S. Department of Labor Bureau of Labor Statistics, Levin's (2009) estimate for the economic value of an additional high school graduate is equal to about \$254,700 in 2020 dollars after adjusting for inflation.

The findings from Cowen et al. (2013) provide a cautious estimate that access to school choice might increase high school graduation rates by at least four percentage points in North Carolina. The estimates from Levin (2009) and Cowen et al. (2013) can be combined with the expected number of students using private school choice programs in North Carolina each year to forecast economic benefits. Equations three and four show the forecasted economic benefits accrued by the 77,510 students that would benefit from the program in the 2020-21 school year.

$$77,510 \text{ students} * 0.04 = \mathbf{3,100 \text{ additional graduates}} \quad (3)$$

$$3,100 \text{ additional graduates} * \$254,700 = \mathbf{\$790 \text{ million in economic benefits}} \quad (4)$$

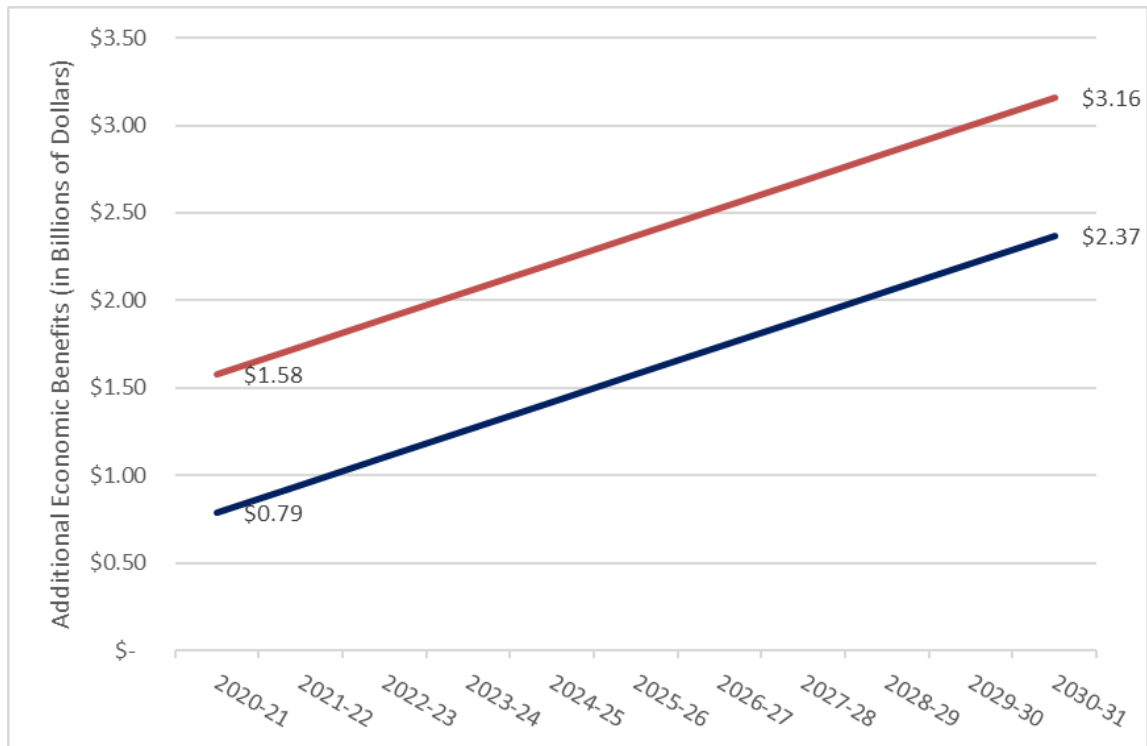
As shown in equation three, a four-percentage point increase in high school graduation rates would be expected to produce 3,100 additional high school graduates. Equation four estimates that a 3,100-student increase in high school graduates would be expected to translate to \$790 million in additional economic benefits over their lifetimes. Increased graduation rates would be expected to produce 9,301 additional graduates by 2030, which would be expected to translate to \$2.4 billion in additional economic benefits over their lifetimes (Table 2 and Figure 2). Results are also reported for a model based on a higher program participation rate of 10 percent of the population of K-12 students in the first year (Columns 5 through 7 in Table 2).

Table 2: Projected Increases in High School Graduates and Economic Benefits

Year	Cautious Participation			Higher Participation		
	Students	Additional High School Graduates	Additional Economic Benefits (Billions of 2020 Dollars)	Students	Additional High School Graduates	Additional Economic Benefits (Billions of 2020 Dollars)
2020-21	77,510	3,100	\$0.79	155,020	6,201	\$1.58
2021-22	93,012	3,720	\$0.95	170,522	6,821	\$1.74
2022-23	108,514	4,341	\$1.11	186,024	7,441	\$1.90
2023-24	124,016	4,961	\$1.26	201,526	8,061	\$2.05
2024-25	139,518	5,581	\$1.42	217,028	8,681	\$2.21
2025-26	155,020	6,201	\$1.58	232,530	9,301	\$2.37
2026-27	170,522	6,821	\$1.74	248,032	9,921	\$2.53
2027-28	186,024	7,441	\$1.90	263,534	10,541	\$2.68
2028-29	201,526	8,061	\$2.05	279,036	11,161	\$2.84
2029-30	217,028	8,681	\$2.21	294,538	11,782	\$3.00
2030-31	232,530	9,301	\$2.37	310,040	12,402	\$3.16

Source: Author's calculations

Figure 2: Economic Benefits of Increased Graduation Rates (in Billions of of 2020 dollars)



Source: Author's calculations

Crime Reduction

School choice programs could reduce crime through competitive pressures to improve behavioral outcomes, improvements in discipline policies, and by providing access to cultures and peer groups that discourage risky behaviors (DeAngelis & Wolf, 2019a). Six rigorous peer-reviewed studies link access to school choice to crime outcomes. Each of the six studies finds statistically significant positive effects on crime reduction overall or for subgroups of students (DeAngelis & Wolf, 2019a; DeAngelis & Wolf, 2020; Deming, 2011; Dills & Hernández-Julián, 2011; Dobbie & Fryer, 2015; McEachin et al., 2020). The two random assignment studies on the topic both find that winning a school choice lottery largely reduces incarceration rates for male students (Deming, 2011; Dobbie & Fryer, 2015). For example, Dobbie and Fryer (2015) find that winning a lottery to attend a public charter school in New York City reduced incarceration for male students by 4.4 percentage points. DeAngelis and Wolf (2019a) similarly found that students who used the Milwaukee Parental Choice Program for at least four years were 3 to 4 percentage points less likely to be found guilty of a felony than their carefully matched peers in nearby public schools.

McEachin et al. (2020) estimated the effects of access to public charter schools on crime in North Carolina. The authors found that students entering public charter schools in 9th grade were 0.9 percentage points (30 percent) less likely to commit any crimes, 0.7 percentage points (32 percent) less likely to be convicted of a misdemeanor, and 0.4 percentage points (31 percent) less likely to be convicted of a felony than their matched peers in traditional public schools. McEachin et al. (2020) also found that students who stayed in a charter school in 9th grade relative to those who switched back to traditional public schools in the same year were marginally less likely to be convicted of any crimes. McEachin et al. (2020) also found evidence

suggesting access to charter schools reduced other behavioral outcomes such as chronic absenteeism and suspensions.

Crime has substantial social costs. The costs of crimes can be divided into four categories: direct economic losses suffered by victims, indirect losses suffered by victims, criminal justice system costs, and negative effects on job prospects and productivity for criminals (McCollister, French, & Fang, 2010). Based on the average social costs of crimes estimated by McCollister, French, and Fang (2010) and the average social cost of a felony estimated by Flanders and DeAngelis (2018), it is possible to forecast the economic impact of private school choice in North Carolina. Using the sample of crimes reported in a longitudinal evaluation of the Milwaukee voucher program, Flanders and DeAngelis (2018) estimated the average cost of a felony to be \$35,950 in 2017 dollars, or about \$37,800 in 2020 dollars.

Using the more cautious estimate of a 0.4-percentage point reduction in felonies found by McEachin et al. (2020), and the number of students expected to use education savings accounts in North Carolina the first year, equations 5 and 6 can be used to forecast economic benefits:

$$77,510 \text{ students} * -0.004 = \mathbf{310} \text{ fewer felons} \quad (5)$$

$$310 \text{ fewer felons} * \$37,800 = \mathbf{\$12 \text{ million}} \text{ in economic benefits} \quad (6)$$

If we observe similar crime-reducing benefits in North Carolina, access to education savings accounts could reduce crime by 310 felons for the population of students expected to use the statewide program in the first year. This reduction in felons would be expected to produce about \$12 million in economic benefits by reducing the social costs associated with crimes. Access to the program would be expected to lead to 930 fewer felons by 2030, which would lead to around \$35 million in social benefits associated with reductions in crime (Table 3 and Figure 3). These estimates are cautious since they assume that each felon would have committed only one crime.

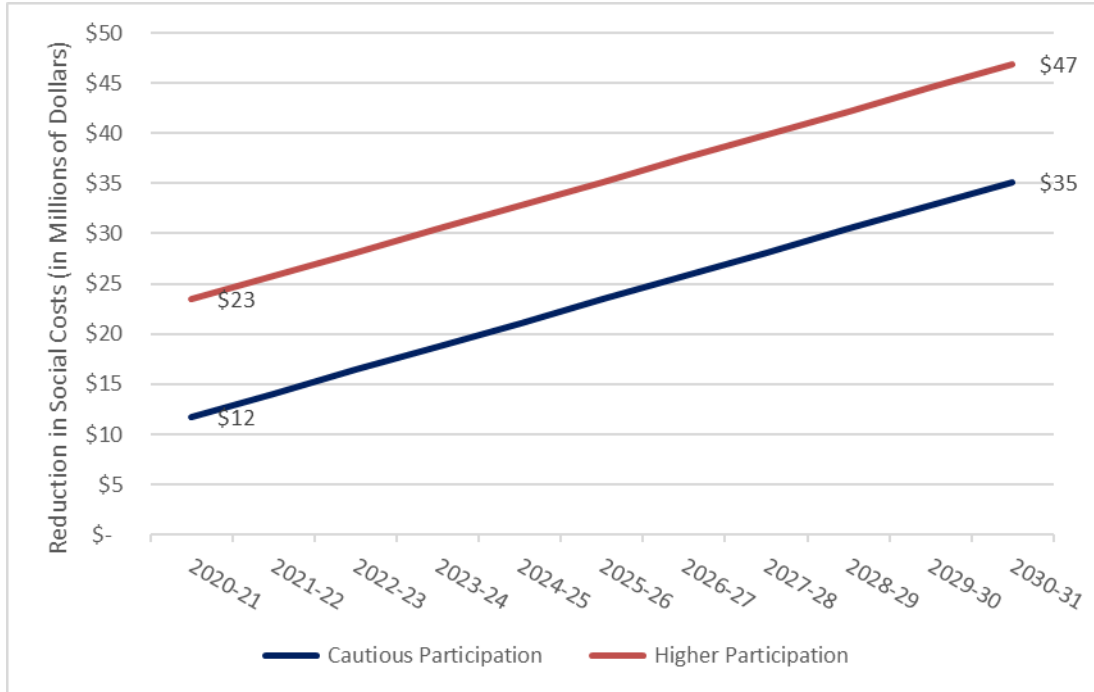
The estimates also ignore any avoided social costs associated with reductions in misdemeanors. Results are also reported for a model based on a higher program participation rate of 10 percent of the population of K-12 students in the first year (Columns 5 through 7 in Table 3).

Table 3: Projected Reductions in Felons and Economic Benefits (in Millions)

	Cautious Participation			Higher Participation		
Year	Students	Reduction in Felons	Additional Economic Benefits (Millions of 2020 Dollars)	Students	Reduction in Felons	Additional Economic Benefits (Millions of 2020 Dollars)
2020-21	77,510	310	\$12	155,020	620	\$23
2021-22	93,012	372	\$14	170,522	682	\$26
2022-23	108,514	434	\$16	186,024	744	\$28
2023-24	124,016	496	\$19	201,526	806	\$30
2024-25	139,518	558	\$21	217,028	868	\$33
2025-26	155,020	620	\$23	232,530	930	\$35
2026-27	170,522	682	\$26	248,032	992	\$38
2027-28	186,024	744	\$28	263,534	1,054	\$40
2028-29	201,526	806	\$30	279,036	1,116	\$42
2029-30	217,028	868	\$33	294,538	1,178	\$45
2030-31	232,530	930	\$35	310,040	1,240	\$47

Source: Author's calculations

Figure 3: Economic Benefits of Crime Reduction (in Millions of 2020 Dollars)



Source: Author's calculations

Social Benefits

Allowing education dollars to follow children to the educational environment that works best for them has other benefits that are not easily quantifiable in terms of dollars and cents. For example, four systematic reviews have summarized the rigorous literature linking school choice to civic outcomes such as political knowledge, political participation, voluntarism, civic engagement, charitable activity, and tolerance of others. All six of these reviews find that access to private school choice generally improves civic outcomes (DeAngelis, 2017; DeAngelis & Wolf, 2019; EdChoice, 2020; Greene, 2005; Wolf, 2007; Wolf, 2020).

Wolf (2007) reviewed 21 studies on the topic that reported 59 different findings. Wolf (2007) reported that a majority (33 of 59) of the findings indicated statistically significant positive effects of access to private and charter schools, whereas only three of the findings

revealed the opposite. More recently, Wolf (2020) updated his initial review and found similar positive results. He found 34 studies reporting a total of 86 findings on the relationship between access to private schools and civic outcomes. Wolf (2020) found that a majority (50 of 86) of the findings demonstrated a statistically significant advantage for private schools relative to public schools. Only three of the 86 findings indicated a statistically significant advantage for traditional public schools, whereas the remaining 33 results indicated no statistically significant differences between sectors.

Limiting search results to rigorous evaluations of private school choice programs, DeAngelis (2017) performed a systematic review of the literature and found 11 evaluations on the topic. A majority of those evaluations found statistically significant positive effects of private school choice programs on civic outcomes, whereas none of the evaluations found statistically significant negative effects overall. DeAngelis and Wolf (2019) updated this review and found that seven out of 12 studies on the topic detected statistically significant positive effects of private school choice on civic outcomes overall. None of the 12 studies detected statistically significant negative effects overall. EdChoice (2020) reviewed 11 studies on the topic and found that six detected statistically significant positive effects. Again, none of the studies reported negative effects.

Families choose specific educational alternatives for their children for a host of reasons. Parents consistently rank safety at near the top of the list of their priorities when seeking educational options (Bedrick & Burke, 2018; Catt & Rhinesmith, 2017; Holmes Erickson, 2017; Kelly & Scafidi, 2013). DeAngelis and Wolf (2019) summarized the evidence linking private school choice to safety and found six studies on the topic. Each of the six studies reported statistically significant positive effects on safety as reported by students, parents, or principals.

More recently, Schwalbach and DeAngelis (2020) reviewed the evidence and found 10 rigorous studies on the topic. Each of the 10 studies found private school safety advantages as reported by parents, students, or faculty (DeAngelis & Lueken, 2020; Fan, Williams, & Corkin, 2011; Farina, 2019; Howell & Peterson, 2006; Lleras, 2008; Shakeel & DeAngelis, 2018; Waasdorp et al., 2018; Webber et al., 2019; Witte et al., 2008; Wolf et al., 2010).

Families are overwhelmingly satisfied when they have access to private school choice. Rhinesmith (2017) found 19 studies linking private school choice to parental satisfaction, and each of the evaluations revealed positive effects. EdChoice (2020) more recently reviewed this body of evidence and found that 29 of 30 studies on the topic revealed a positive relationship between private school choice and parental satisfaction. Eight random assignment studies each find that winning a lottery to use a private school choice program improved satisfaction as reported by students or their parents (Greene, 2001; Howell & Peterson, 2002 (four locations); Kisida & Wolf, 2015; Peterson & Campbell, 2001; Webber et al., 2019).

Expansion of school choice also leads to more equity in the education system. The most advantaged families already have school choice since they are more likely to have the resources to pay for private education out of pocket or to purchase a residence that happens to be assigned to the best traditional public school in the area. Inequities are inherent in the traditional public school system because of artificial barriers to accessing the best schools created by residential assignment and inequitable funding through property taxes. In this way, traditional public schools are not “public” in any meaningful sense of the word. They are not open to the public because they discriminate on the basis of zipcode. They are not true “public goods” since they are excludable and rivalrous.

Allowing the money to follow the child to the best educational setting leads to more equity because it allows less-advantaged families to access alternatives (Wolf, 2018). Although universal school choice would lead to more equity as well, the vast majority of existing private school choice programs are targeted to less-advantaged families by income, special need, or the quality of their child's residentially assigned public school.¹⁹ Some studies also suggest that out of the relatively disadvantaged group of eligible families, the less-advantaged families are generally more likely to apply for access to school choice programs, perhaps because their children are less likely to be adequately served by their residentially assigned public schools (Anderson & Wolf, 2017; Hart, 2014; Kisa et al., 2017; Figlio, Hart, & Metzger, 2009).²⁰

The equity implications of funding students directly through education savings accounts are particularly relevant to the COVID-19 pandemic in 2020. More-advantaged families are more likely to have the resources to cover the costs associated with effective homeschooling and microschooling. Media outlets such as Washington Post, New York Times, Salon, Texas Tribune, Vox, and USA Today have all noted that “pandemic pods” could lead to inequities in the K-12 education system since more-advantaged families will be more likely access these alternatives. It is true that failing to reopen public schools in person disproportionately adversely affects households that rely on two incomes and single-parent households. However, each of these outlets has somehow missed the obvious solution to fund students directly so that less-advantaged families can have access to these kinds of options as well.²¹ The U.S. Census Bureau

¹⁹ Who uses school choice programs? EdChoice. Retrieved from <https://www.edchoice.org/engage/faqs/who-uses-school-choice-programs/>

²⁰ DeAngelis, C. A. (2018). Vouchers tend to serve the less advantaged. Education Next. Retrieved from <https://www.educationnext.org/vouchers-tend-serve-less-advantaged/>

²¹ Ladner, M., & Bedrick, J. (2020). Going to school where everybody knows your name. Washington Examiner. Retrieved from <https://www.washingtonexaminer.com/opinion/going-to-school-where-everybody-knows-your-name>

indicates that North Carolina spent about \$9,931 per child in the 2018 school year.²² Allowing a substantial portion of those dollars to go to the child, rather than the school system, would help more families access alternatives such as private schools, micro schools, and homeschooling.

This report likely underestimates the true economic benefits of school choice initiatives because the calculations do not capture social benefits associated with more equity, satisfaction, and improved civic outcomes. The accounting of the benefits is also cautious because it does not include any of the positive competitive impacts on traditional public schools. A large body of evidence suggests that competitive pressures from private school choice leads to improvements in outcomes for children who remain in the public school system. This is likely because the traditional public schools start to change their approaches for the better to avoid losing the funding associated with students who choose to leave. As EdChoice (2020) has documented, 26 of 28 studies on the topic find statistically significant positive effects of school choice competition on outcomes in public schools (e.g. Chakrabarti, 2013; Egalite & Mills, 2019; Figlio, Hart, & Karbownik, 2020; Hoxby, 2000; Rouse et al., 2013). Egalite (2013) similarly found that 20 of 21 studies revealed positive effects of private school competition. More recently, the most comprehensive meta-analysis of the evidence on this topic found statistically significant positive effects on public schools overall (Jabbar et al., 2019). In this sense, students do not necessarily have to use school choice programs to benefit from them.

Funding students directly through an education savings account program could also theoretically save taxpayer dollars. The Fiscal Research Division of the North Carolina General Assembly recently estimated that the state's Opportunity Scholarship Program saves taxpayer dollars if less than 39 percent of the students using the program would pay for private school

²² 2018 Public Elementary-Secondary Education Finance Data. U.S. Census Bureau. Retrieved from <https://www.census.gov/data/tables/2018/econ/school-finance/secondary-education-finance.html>

tuition and fees out-of-pocket without the assistance from the program (Bailey, 2020). The lottery-based studies in the U.S. suggest that, on average, only around 10 to 16 percent of students using private school choice programs would pay for private school tuition out-of-pocket (Lueken, 2020). EdChoice (2020) reviewed the evidence on this topic and found that 49 of the 55 existing evaluations suggest that private school choice programs in the U.S. generate taxpayer savings.

If all K-12 public education funding were based on student enrollment in North Carolina, and if 10 percent of students using the program would pay for private education out-of-pocket, a universal education savings account funded at around three-quarters (\$7,448) of the public school spending amount (\$9,931) would likely save taxpayer money each year. Each student switching from public schools would save taxpayers \$2,483 ($\$9,931 - \$7,448$) whereas each student who would have accessed private education anyway would cost taxpayers \$7,448. If 77,510 students used the program in the first year, and 10 percent of those families would have paid for private education absent the program, the state would save over \$115 million in one year [$(\$9,931 * 77,510 * 0.9) - (\$7,448 * 77,510)$]. The state would be expected to save taxpayer money if less than 25 percent of students using the program would pay for private education without financial assistance [$1 - (\$7,448/\$9,931)$]. However, North Carolina has a K-12 education funding formula that is largely based on resources and programs as opposed to student enrollment.²³ Because district-run public schools keep a significant portion of dollars for students who are no longer enrolled, the net fiscal impact of such an education savings account is unclear and warrants further analysis.²⁴

²³ North Carolina. FundEd: State Policy Analysis. EdBuild. Retrieved from <http://funded.edbuild.org/state/NC>

²⁴ Student-based allocation: Doling out dollars based on student needs. Edunomics Lab at Georgetown University. Retrieved from <https://edunomicslab.org/our-research/student-based-allocations/>

Constitutional Challenges

The first constitutional challenge to the North Carolina Opportunity Scholarship Program was unsuccessful. In 2015, the state Supreme Court ruled in favor of the program by a 4-3 vote along partisan lines.²⁵ The program was recently challenged again by the North Carolina Association of Educators (NCAE). NCAE now claims that the program discriminates on the basis of religion and sexual orientation—neither of which hold any water.²⁶ The program awards scholarships to all eligible low-income students regardless of their religious backgrounds, sexual orientations, or gender identities. Pell Grants similarly do not discriminate on the basis of religion just because they can be used at private religious universities—the funding goes to students who can then take that money to the public or private (religious or non-religious) university of their choosing.

The plaintiffs further argue that the program discriminates against them because they live in an area without a non-religious private school nearby. However, the family is still allowed to use their children's education dollars at their non-religious district-run public school and they are free to use the scholarships to send their children to other non-religious schools in adjacent districts. Similarly, Pell Grants do not discriminate on the basis of religion just because some families live in areas without non-religious private colleges—and food stamps do not discriminate on the basis of religion just because some families live in areas with grocery stores that do not have a wide array of kosher or halal items available.

The plaintiffs also argue that the program does not serve a public purpose, which is not true either. The public benefit of education funding is a well-educated populace. The best way to

²⁵ North Carolina. Constitutional Provisions. Institute for Justice. Retrieved from <https://ij.org/report/school-choice-and-state-constitutions/north-carolina>

²⁶ Doran, J. (2020). NC Institute for Constitutional Law says lawsuit on Opportunity Scholarships is 'meritless.' North State Journal. Retrieved from <https://nsjonline.com/article/2020/08/nc-institute-for-constitutional-law-says-lawsuit-on-opportunity-scholarships-is-meritless>

ensure that happens is to allow the funding to follow the child so that schools are directly accountable for their educational needs. The only peer-reviewed evaluation of the program also suggests that access to more educational options is associated with improved academic outcomes (Egalite, Stallings, & Porter, 2020). And if the residentially assigned public schools were actually meeting the educational needs of disadvantaged students, why would thousands of low-income families voluntarily choose to pull their children out of them when given the option?

Conclusion

This study finds evidence to suggest that expanding access to educational choice would lead to substantial economic benefits related to better academic and social outcomes. This study estimates that access to the statewide education savings account program would be associated with \$19 billion in higher lifetimes earnings, \$790 million from additional high school graduates, and \$12 million from reductions in crimes for the 77,510 students expected to use the program in the first year. These economic benefits would be projected to grow to \$58 billion in additional lifetime earnings, \$2.4 billion from additional high school graduates, and \$35 million from reductions in crimes for the 232,530 students expected to use education savings accounts by the 2030-31 school year.

These potential economic benefits should not be combined and should be assessed separately because of overlap. For example, higher academic achievement increases the likelihood of high school graduation, and receiving a high school diploma reduces the likelihood of incarceration. It is also possible that results would differ in North Carolina based on context, geographic location, and implementation. Readers should therefore exercise considerable caution when examining these types of economic forecasts.

In addition to the forecasted economic benefits, funding students directly through education savings accounts would lead to more equity in the education system. Less-advantaged families would be more likely to have the resources to afford the costs of private school tuition, microschoooling, and homeschooling. Funding students directly could also disproportionately benefit less-advantaged students since they are more likely to be residentially assigned to lower-quality district-run public schools. The preponderance of the evidence also suggests that access to educational choice programs leads to improvements in safety, satisfaction, and civic outcomes (e.g. Rhinesmith, 2017; DeAngelis, 2017; Schwalbach & DeAngelis, 2020; Wolf, 2020).

The evidence suggests expanded choice would lead to better outcomes for students and their communities. But funding students directly makes sense from a logical standpoint as well. The current funding structure of the K-12 public education system prioritizes school systems over individual students. Statewide education savings accounts would put the power in the hands of families by funding students instead of school systems, just like we already do with many other taxpayer-funded initiatives. K-12 education funding should similarly go to families. Families should then similarly be able to take that money to the public or private education provider of their choosing. Education funding is supposed to be meant for educating students—not protecting a government monopoly. North Carolina’s K-12 education funding should prioritize students over school systems.

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