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Distribution of Education Savings Accounts Usage Among Families: Evidence from the Florida Gardiner Program

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ABSTRACT

Education savings accounts (ESAs) are education funding mechanisms that allow for families to receive a deposit of public funds to a government-authorized savings account. Using student-level longitudinal data, this paper examines how families participating in the Florida Gardiner Scholarship Program use education savings account funds. Results indicate that families use an increasing proportion of ESA funds when students remain in the program. The longer students remain in the program, the share of ESA funds devoted to private school tuition decreases while expenditure shares increase for curriculum, instruction, tutoring, and specialized services. Students in rural areas not only use a greater portion of their ESA funds than families in urban and suburban areas, but they also spend smaller portions of their funds on tuition and appear to customize more.

KEYWORDS Education Savings Accounts (ESA), Florida Gardiner Scholarship Program, School choice, Education customization, Education funding

SECTION 1: INTRODUCTION

Education Savings Accounts (ESAs), school vouchers, and tax-credit scholarships allow families to use public funding to choose the best learning environment for their children. School vouchers increase access to private schooling by providing families of eligible children with a portion of public funding that would have been spent on that student's public schooling. Tax-credit scholarships incentivize individual and business taxpayers to donate to nonprofit scholarship organizations by providing tax credits for their contributions. Scholarship organizations in turn use contributions to award scholarships for eligible students to attend private schools of their choice. ESAs are education funding mechanisms that allow for families to receive a deposit of public funds to a government-authorized savings account. While voucher and tax-credit scholarships are limited to private schools, ESAs hold restricted funds to provide access to a host of educational services including online learning programs, private tutoring, community college expenses, higher education costs, and other approved customized learning services and materials instead of being limited to payment of private school tuition and fees (EdChoice, 2021b).

The proliferation of ESAs in the United States has been accelerating in many states. In 2011, Arizona passed and launched the Empowerment Scholarship Accounts program. This program increased access to learning opportunities for children with special needs and other circumstances by creating an ESA program (EdChoice, 2021b). ESA programs currently operate and enroll students in five states: Arizona (Empowerment Scholarship Accounts), Florida (Gardiner Scholarship Program), Mississippi (Equal Opportunity for Student with Special Needs Program), North Carolina (Personal Education Savings Account), and Tennessee (Individualized

Education Account Program).[1] They enroll students with special needs or special circumstances including children from "failing" schools, active duty and fallen military, adoptive care and from tribal lands (Butcher, 2017; EdChoice, 2021a).

Emerging research on ESAs has explored how families spend and even customize ESA dollars (Burke, 2013; Burke & Bedrick, 2018; Butcher, 2013b, 2017; Butcher & Bedrick, 2013; Butcher & Burke, 2016), parent satisfaction with ESA accounts (Butcher, 2013a, 2017; Butcher & Bedrick, 2013; DiPerna, 2015; Kittredge, 2016; Varga, Cheng, Tuthill, & Whittaker, 2021), and design elements to fund ESAs (Bedrick, Butcher, & Bolick, 2016; Burke, 2016, 2020; Butcher, 2013a; Jimenez-Castellanos, Mathis, & Welner, 2018; Ladner, 2012). However, the literature has not investigated if the spending behavior of families enrolled in ESAs changes over multiple years. Given that ESA programs are relatively new, prior research has focused on the initial years of data to find aggregate trends in spending. Yet, families now have access to using ESA programs for multiple years. This allows for families to learn and develop new and potentially better ways of managing ESA funds. If families are able to learn and develop specialized ways to improve educational investment, then families can perfect how they tailor education to the best use of their public educational funds. Yet, little is known about the spending behaviors of families using ESA funds across a prolonged timeframe of their child's educational lifespan.

[1] In 2015, Nevada enacted the Nevada Education Savings Account Program. In 2016, after two lawsuits were filed against the program, the Nevada Supreme Court upheld the program but held the funding mechanism unconstitutional. After several years of not funding the program, the Nevada legislature eventually repealed the program in 2019. In 2017, thirteen states introduced ESA legislation of which Arkansas was the first state to propose a fully universal program to allow for any K-12 public school student to apply (Jimenez-Castellanos, Mathis, & Welner, 2018; Trivitt, 2017); however, this program failed to pass. As of June 1, 2021, three states passed legislations to create new ESA programs: Indiana (Education Scholarship Account Program), Kentucky (Education Opportunity Account Program), and West Virginia (Hope Scholarship Program).

This article will contribute to the emerging ESA literature by evaluating the spending patterns of families enrolled in an ESA account for multiple years. We leverage data from the largest ESA program in the United States to investigate differences in spending of families enrolled for one to five years. By evaluating the largest and second-oldest ESA program, we are able to capture a larger sample of families enrolled in ESAs as well as track families that enroll in the program for multiple years. Using data from Step Up for Students, currently one of two nonprofit organizations that administer Florida's ESA program, we find students enrolled in the program longer use a higher percentage of their ESA funds, use their funds more frequently to purchase items, and make purchases from multiple categories of spending. Educational spending on curriculum, tutoring and specialized services increases overtime while tuition decreases the longer a family uses an ESA. Further, we find suggestive evidence that usage of ESAs differs based on location with families in rural communities spending a lower percentage of their ESAs but making more frequent purchases in a greater variety of categories of spending. In particular, families in rural communities purchase more on curriculum and instruction than tuition, specialized services, and college spending than urban communities. These findings imply that families enrolled in ESAs are learning from prior usage and are able to customize education to areas beyond tuition over the course of their child's educational life cycle.

The article proceeds in six sections, including this introduction. Section 2 is a review of school choice research. Section 3 provides information about Florida's Gardiner Scholarship Program and develops testable hypotheses that support our research questions. Section 4 presents a description of the data and model specifications. Section 5 discusses the empirical results. Section 6 discusses the main implications of our results and concludes with some limitations of this study as well as some suggested research for future ESA scholarship.

SECTION 2: LITERATURE REVIEW

Although empirical research on ESAs is scant, there is a considerable body of evidence about the effects of school voucher and tax-credit scholarship programs on various student, parent, and societal outcomes. First, evidence on the effects of voucher programs on participant test scores is somewhat mixed. Random assignment studies documented null to positive test score gains, on average, for students participating in privately funded voucher programs operating in numerous large cities (Bettinger & Slonim, 2006; Bitler, Domina, Penner, & Hoynes, 2015; Cowen, 2008; Jin, Barnard, & Rubin, 2010; Krueger & Zhu, 2004). Random assignment studies also documented null to positive test score effects for publicly funded voucher programs in Milwaukee and Washington D.C. (Greene, Peterson, & Du, 1999; Lamarche, 2008; Webber, Rui, Garrison-Mogren, Olsen, & Gutmann, 2019; Wolf et al., 2013). Yet, negative effects were estimated for students in the Louisiana Scholarship Program (Mills & Wolf, 2019).

Some studies used matching methods to measure test score differences between program participants and their matched peers. These studies found null to positive effects for Milwaukee's voucher program (Wolf, 2012) and null to negative effects in Indiana and Ohio (Figlio & Karbownik, 2016; Waddington & Berends, 2018).

Foreman (2017) reviewed studies of the impact of voucher and tax-credit scholarship programs on educational attainment at the secondary and postsecondary level. Attainment studies tend to find null to positive program effects on various attainment outcomes including high school graduation, college enrollment, persistence in college, and degree attainment. Studies included Florida's tax-credit scholarship program and voucher programs in Washington D.C., Milwaukee, Louisiana, and New York. A more recent study of Indiana's voucher program measured 10 attainment indicators including failing classes, suspensions, college enrollment, and

type of college to find null to positive effects, mirroring previous attainment studies of other programs (Austin & Pardo, 2021).

Several systematic reviews looked at the effects of voucher and tax-credit scholarship programs on public school students' test scores (Egalite, 2013; Egalite & Wolf, 2016; Epple, Romano, & Urquiola, 2017). Each of these reviews show that students who remain in public schools tend to experience modest gains on test scores after the introduction of a choice program increases competition for the public schools. A meta-analysis confirmed conclusions from these reviews that increasing competition and educational options by introducing choice programs lead to modest gains in test scores for public school students (Jabbar et al., 2019).

While there is a substantial amount of empirical research on education choice programs, few studies have examined ESA programs. Given that ESAs allow families to access educational services beyond private schooling for their children, findings from research on other choice programs like vouchers and tax-credit scholarship programs may have limited generalizability to ESA programs. A logical step to gauging the external validity of prior research on ESA programs is understanding how families use ESAs and the extent that usage differs from choice programs that are limited to private schools.

SECTION 3: FLORIDA'S GARDINER SCHOLARSHIP PROGRAM

In 2014, Florida created the second education savings account program in the United States, the Gardiner Scholarship Program, to be funded by the state and administered by an approved scholarship funding organization. This program is now the largest ESA program in the country. The Gardiner program operates under the Fla. Stat. §1002.385 to provide students with special needs an opportunity to gain an ESA (EdChoice, 2021a). Students are eligible if they are between the ages of 3 and 22 (or in 12th grade, whichever comes first) and have an

Individualized Education Plan or have been diagnosed by a physician or psychologist in a specific high-need category.[2] Students in the program may not attend a public school at the same time.[3]

Families can use funds to purchase approved educational services including private school tuition, tutoring, online education, home education, curriculum, therapy, postsecondary educational institutions in Florida, and other defined educational services. Families are not required to spend all funds each year, and any unused funds may be rolled over and used the following year.[4]

The Florida state budget, the General Appropriations Act, provides annual funding for the Gardiner program. The amount provided to each student varies based on the grade, county of residence and public school spending for students with disabilities. The funds are then provided to eligible ESA students by an approved scholarship funding organization. The largest of such organizations is Step Up for Students, a nonprofit organization that helps administer five scholarship programs to empower families to discover the best educational options for their children. Some of the basic rules that govern the statewide program includes no income limit on those eligible, a defined enrollment cap, an account cap of 90 percent of charter school or 100 percent of school district funding, a mandate to have state or national standardized testing, and

[2] Approved diagnoses are autism spectrum disorder, cerebral palsy, Down syndrome, an intellectual disability, muscular dystrophy, Phelan-McDermid syndrome, Prader-Willi syndrome, spina bifida, Williams syndrome, anaphylaxis, dual sensory impairment or rare diseases which affect patient populations of fewer than 200,000 Americans. Students are also eligible if A) they are identified as deaf or visually impaired, B) they have had a traumatic brain injury defined by the state board of education, C) they are hospitalized or homebound with a medically diagnosed physical or psychiatric condition for more than six months, or D) they are students aged 3, 4 or 5 who are considered "high-risk" due to developmental delay (EdChoice, 2021a).

[3] Students may receive contracted services provided by a public school or school district, including classes. These students are not considered enrolled in a public school for program eligibility purposes.

[4] Interest is allocated to students' ESA accounts on a monthly basis, provided they have a positive balance. Families do not have input on how funds are invested or distributed.

families can't use the funds for other beneficiaries or others for the same services (EdChoice, 2021a).

The Gardiner Scholarship Program experienced steady growth since its inception, when almost 1,600 students participated in the program during the first year, as displayed in Figure 1.

<Figure 1 around here>

As of Fall 2020, the program enrolled 17,508 students from 1,870 participating schools. During the 2020-21 academic year, more than 17,000 students participated. The Florida legislature appropriated $189.9 million to support the Gardiner program in 2020-21. With that appropriation, the average ESA account was valued at $10,515 in the 2020-21 school year (EdChoice, 2021a). The program has seen growth over time with limited alterations. Although it has been challenged for violations of the state condition's "single subject matter" rule (Faasse v. Scott, No. 2014 CA 1859 (Fla. 2d Cir. Dec. 30, 2014)), there has been no successful court case altering the program.

Parents take on significant responsibilities when participating in the Gardiner program. The most important of these is placing their child in an educational setting or selecting services that best meets their needs. Students are required to meet mandatory attendance requirements, which can be accomplished by enrolling in a private school or home education program (Florida Department of Education, 2021).

The Gardiner program is conducive to studying how families use an ESA. Given that the program has enrolled students for a number of years and is the largest ESA in the United States, it is an ideal setting to investigate how families use ESAs overtime. Specifically, our research questions are the following. 1) What is the distribution of ESA expenditures over our entire study period and by each year of our study period? 2) Do families who use ESAs for more than one

year use their ESAs differently than those who are new to using ESAs? 3) Does ESA usage differ for those located in different types of communities including urban, suburban, and rural communities? 4) Do families who use ESAs for more than one year and are in different types of communities spend ESAs on different categorical groups (e.g., private tuition, curriculum, instruction, college, and private services). With these research questions, we assert the following hypotheses.

H1: Families that use ESAs longer will spend more of their ESA accounts.

H2: Families that use ESAs longer will spend in more expense areas.

H3: Families located in rural areas will spend in more expense areas than families located in urban and suburban areas.

We evaluate these research questions and hypotheses using the data and methods discussed in the next section.

SECTION 4: DATA AND METHODS

Data

We use longitudinal data, obtained from Step Up for Students, at the student, parent, household, and school level from School Year (SY) 2014-15 through SY 2018-19. Student-level data include information such as gender, race, year in program, grade, diagnosis type, and primary language. Parent and household-level information include primary guardian's marital status, number of students in household, and ZIP code's median household income. School-level information includes religious affiliation, grades served, and John M. McKay Scholarship participant status.

Our main variables of interest are the detailed information about ESA usage including the amount of funds deposited in each ESA account, the amount of funds used, and categorical expenditures. ESA expenditure data contain information about claims including category, amount approved for each claim, and service date. Claim data report 24 different types of goods and services which we split into eight different expenditure categories including private tuition, instructional materials, curriculum, specialized services, testing, tutoring, public services, and college.[5]

Table 1 displays summary statistics. The average ESA award is $10,097, of which families use $8,373 on average. Overall, families on average used ESAs to make 21 transactions to purchase about four different kinds of educational goods and services. Families spend most of their ESA funds on private tuition (57 percent), followed by instructional materials (21 percent), specialized services (11 percent), and tutoring (5 percent). Families spend no more than 2 percent of their ESA funds, on average, on curriculum, public services, college, and testing. Students have participated in the program for an average of two years. Fifty-four percent of ESA students are white, 30 percent are Hispanic, and 9 percent are black. Almost half of ESA students reside in suburbs, 33 percent are in rural settings or small towns, and 19 percent reside in urban areas.

Most ESA students are diagnosed with autism (61 percent), 18 percent of ESA students have an intellectual disability, and 4 percent to 6 percent of ESA students are high-risk, diagnosed with multiple disabilities, or have other disabilities.[6] Most students who use an ESA to pay tuition at a private school attend a non-denominational school. Finally, 35 percent of ESA students attend private schools that also participate in the state's John M. McKay Scholarships for Students with Disabilities Program.

[5] See Appendix Table A for a list of expenditure categories and services included in each category.
[6] Students aged 3, 4, or 5 with developmental delay are considered "high-risk."

<Table 1 around here>

Some individuals voice concerns about special needs choice programs where students do not continue participating in them after enrolling because private schools tend to not serve high-need students (The National Coalition for Public Education, 2021). Therefore, students who participate in choice programs that focus on special needs students leave soon after entering and end up back in the public school system. Table 2 displays year-by-year participation in these programs for each cohort. By 2019, 71 percent of ESA students were in the program for more than one year. Moreover, on average about 85 percent of each cohort in a given year continued the program in the following year. For example, of students entering the program in 2016 for the first time (1,171), we observe 85 percent of these students in the program in 2017. Among the initial cohort of students who entered the program in 2015, we observe 55 percent of them in the program during 2019.[7] Although data do not indicate reasons for students leaving the program, observed retention allows us to examine how usage evolves for students who continue in the program for multiple years.

<Table 2 around here>

Methods

This descriptive analysis examines the distribution of ESA expenditures. We seek to examine our research questions by estimating regression models that control for a variety of student, parent, household, and school characteristics. We estimate the following an OLS model that takes the following form:

$$Y_{it} = \alpha + \beta_1 X_{it} + \beta_2 S_{it} + \beta_3 P_{it} + \gamma_t + \varepsilon_{it} \quad \text{(Equation 1)}$$

[7] These results are similar when we exclude students in grade 12 and when we include only students who used their ESAs to pay for private school tuition.

where Y_{it} denotes usage for student i in during year t (usage measurements include the percentage of ESA funds used, frequency of purchases, number of unique services purchased, and percentage of a student's ESA funds spent on each categorical expenditure group); X_{it} represents student characteristics including gender, race, grade, diagnosis type, and primary language; S_{it} represents school-level variables including religious affiliation, grades served, and McKay participant status; P_{it} represents parent and household characteristics including primary guardian's marital status, number of students in household, and ZIP code's median household income; γ_t denotes year indicators; and ε_{it} is a stochastic error term.

The OLS model above generates estimates that will allow us to examine differences in ESA usage for students as a group overall. They do not, however, convey how usage might vary within students over time. To gain a better understanding of the latter concern, we also estimate models with student-level fixed effects with the same controls included in (Equation 1) above which vary over time. We estimate fixed-effects models for students we observe in the program for 5 years. To examine differences by community location, we estimate fixed effects models for urban, suburban, and rural subgroups.

We estimate the following fixed effects model that takes the following form:

$$Y_{it} = \alpha + \beta_1 X_{it} + \beta_2 S_{it} + \beta_3 P_{it} + \gamma_t + \delta_i + \varepsilon_{it} \qquad \text{(Equation 2)}$$

where the variables are denoted same as above and δ_i denotes student fixed effects. The next section reports our findings.

SECTION 5: FINDINGS AND RESULTS

Table 3 displays ESA award amounts, among of ESA funds spent, categorical expenditures, and purchase types for each year studied. Figures are in nominal per-pupil terms. Our first research question is answered with Table 3. During the first year of the program, the average ESA award

amount was $10,120. Except of a small dip in 2017, the average ESA award amount per student was fairly level.

<Table 3 around here>

ESA usage increased over time in terms of funds spent on education-related goods and services. The percentage of ESA funds used increased each year, from 60 percent in 2015 to 73 percent in 2016 and eventually to 88 percent in 2019. Over all of our study years, 83 percent of ESA funds were used, on average. Usage during the initial two years was comparable with Arizona's ESA program, where families used 57 percent and 69 percent of ESA funds to purchase educational services (Butcher & Burke, 2016).

Per-pupil ESA expenditures on private tuition increased by 11 percent between 2015 and 2019, or by almost $550. Expenditures on instructional materials, specialized services, and college tuition increased markedly over the period. The greatest increase was for instructional materials, where per-pupil ESA expenditures increased four-fold, or by $1,375. Per-pupil ESA expenditures for specialized services doubled, increasing by about $450.

ESA usage also increased over time in terms of number of purchases, types of purchases, and number of categories from which purchases were made. In 2015, families used their ESA accounts an average of nine times that year. These purchases represent about two unique items purchased from 1.5 categories. This spending behavior significantly increased by the end of our study period. In 2019, families used their ESAs 30 times to purchase four unique items from two categories.

Most educational choice programs are limited to private schools. The impetus for ESA programs was to enable families to access educational services beyond private school tuition. In the initial year of the Gardiner program, most expenditures were used to pay for private school

tuition. Over time, however, expenditures diversified. While the share of ESA expenditures devoted to private school tuition decreased, the shares of ESA funds used for other categories grew. Figure 2 shows that, between 2015 and 2019, ESA expenditures grew for instructional materials, specialized services, and tutoring. The share of expenditures on testing was less than 1 percent for each year studied while expenditures for curriculum, college, and public services each year ranged from 1 to 2 percent. In other words, the share of non-private school tuition-related expenditures increased from 22 percent in 2015 to 42 percent in 2019.[8]

<Figure 2 around here>

Regression models

Next, we report results from our regression models. Table 4 reports estimates for OLS models that regress our predictors on percentage of ESA funds used, frequency of purchases, and number of unique items (category by type) purchased. Table 5 provides estimates for OLS models where the dependent variables are percentages of ESA funds spent on the eight different expenditure categories. We see statistically significant differences due to years in the program, student demographics, and household/parent factors.

Length in program

In answering our second research question, we find support for hypothesis one. In general, usage in terms of the three outcome variables intensified as the number of years in program increased. For instance, the percentage of ESA funds used among second-year students was, on average, 7.2 percentage points greater than first-year students. The percentage of funds

[8] This trend is similar to that observed among fifth-year program students, where the share of non-private school tuition-related expenditures increased from 28 percent in 2015 to 44 percent in 2019.

used among fifth-year students was 12.2 percentage points greater than first-year students. This observation suggests that those in the program longer utilize their ESA accounts differently.

Looking at where families direct their ESA funds, we see that the longer students are in the program, the percentage of funding spent on school tuition each year declines over time while the share of funds spent on curriculum, instruction, tutoring, and specialized services increases. The share of expenditures on school tuition is 2.2 percentage points lower, on average in the second year and 15.7 percentage points less in their fifth year compared to tuition's share in the first year. These results support the second hypothesis that students who use ESAs longer will spend in more expense areas.

Student Demographics

Black and Hispanic students used greater percentages of their funds, on average, compared to white students. They also used their ESAs to make purchases less frequently and tended to purchase fewer distinct items. The share of ESA funds spent by these groups of students on private school tuition was about 7 to 9 percentage points greater than the share spent by white students. The estimated differential between multi-racial students and white students was also positive but smaller (2.2 percentage points) and statistically significant.

We also observe students whose primary language is Spanish making purchases less frequently and purchasing fewer distinct items than native English speakers. This observation may be due to the share of ESA funds devoted to tuition being 12.2 percentage points higher for students whose primary language is Spanish than students where English is the primary language.

Two rationales might explain differential usage by student demographics. First, Black and Hispanic students might be accessing higher tuition schools which require further funding to

pay for private school tuition. Since minority families tend to face greater income constraints (United States Census Bureau, 2019), increased ESA funding might be allocated to private tuition instead of supplemental services that less income constrained families might purchase in larger proportions. Second, Black and Hispanic families might have less disposable income and thus, direct their own income sources to pay for private school tuition and not use ESAs for supplemental services.

Household and Parent Factors

We observe differences in usage between students in rural settings and students in urban settings. The percentage of funds used is lower for rural students by 3.5 percentage points. On the other hand, the frequency of purchases and number of unique purchases made by rural families were greater than that for urban students, suggesting that rural students may use their ESAs to customize more. All but two estimates for suburban students were statistically insignificant and all very small. The share of ESA funds used by families in rural areas was 3.4 percentage points less on tuition and 1.8 percentage points less on specialized services compared to families in urban settings. The share spent on instruction was 4.5 percentage points more relative to urban students. Other observed statistically significant differences are small in magnitude, less than 1 percentage point. ESA shares spent by both rural and suburban families are about 0.5 percentage points more on curriculum and about 0.3 percentage points less for college savings and programs relative to families in urban areas.

We also observe differences in behavior between students in married households and students in a household with a separated or non-married parent. Students in households with a divorced or single parent use a greater proportion of their ESA funds. Students in household with separated or non-married parents also tend to make fewer purchases and fewer unique purchases

than students in married households. When taking a closer look at what they use their ESA funds on, data reveal that they tend to use greater proportion of ESA funds for tuition, about 7 to 12 percentage points more than students in married households. They spend smaller shares on curriculum, instruction, and specialized services compared to students in married households.

Finally, we observe differences in usage among families by income. Families living in top-quartile income areas tend to use a greater percentage of their ESA funds and make fewer purchase and fewer unique purchases compared to families living in bottom-quartile income areas. They also spend about 3 percentage points less on tuition and 3 and 8 percentage points more on tutoring and specialized services, respectively, relative to families in bottom-quartile income areas.

<Table 4 and Table 5 around here>

To further investigate use of ESAs, we examine usage within students by regressing fixed-effects models for students that have participated in the Gardiner Scholarship Program for five years. We then estimate the model on subsets of students by their residency's setting (urban, suburban, and rural). Results are reported in the panels of Table 6.

<Table 6 around here>

The first panel reports estimates for all fifth-year students. The patterns are similar for the first three measures of usage. As students participate in the program longer, the percentage of ESA funds spent, frequency of purchases, and number of unique purchases each increases. The effect sizes for the frequency of purchases and unique purchases are more pronounced for students living in rural areas. Usage as a percentage of funds spent is more intense for suburban and rural families than urban families.

Estimates in column 4 are negative and statistically insignificant overall for urban and suburban students. They are statistically significant for rural students in years three and four, suggesting that the share of ESA funds devoted to curriculum among Gardiner students residing in rural areas are about 4 percentage points less during their third and fourth years than in their initial year. Estimates in columns 6 and 7 (instruction and tutoring) are almost all statistically insignificant.

Looking at the fifth column in the last panel, we see that rural students spend 12 percentage points less on tuition during their fifth year compared to their first year, a statistically significant result. Estimates for urban and suburban students are much smaller in magnitude and statistically insignificant.

We find statistically significant differences for rural and suburban students. First, the share of ESA funds spent by rural students on specialized services is about 10 percentage points more in their fifth year relative to their initial year (column 8). The share of ESA funds spent on testing is 2 to 3 percentage points more in their fourth and fifth years compared to their first year (column 9). Estimates for urban and suburban students are negative, much smaller in magnitude, and statistically insignificant. Second, the percentage of ESA funds spent by suburban students on college tuition and services is up to 6 percentage points more than the share of funds spent during their first year, all else equal (column 10). Estimates for urban and rural students are statistically insignificant.

Taken together, these results suggest that rural students are more likely to use ESA funds for educational services other than private school tuition. These observations support the notion that rural students, who may have access to fewer educational offerings in not only schools but

also course offerings compared to urban and suburban students, may especially benefit from education savings accounts.

SECTION 6: DISCUSSION AND CONCLUSION

ESAs are designed to allow families access to educational services beyond private school tuition. This paper is the first, to our knowledge, which uses student-level data to analyze how families participating in an educational choice program use their ESAs in the medium-run. Results align with the notion that families participating in Florida's ESA program are using them to customize their children's education. The share of ESA funds used by families increases the longer students remain in the program, as does their frequency of purchases and unique purchase made. The longer students remain in the program, the share of ESA funds devoted to private school tuition decreases while expenditure shares increase for curriculum, instruction, tutoring, and specialized services. As with any new innovation, families likely need time to understand how ESAs work and learn about the availability of educational options beyond brick-and-mortar settings.

Results indicate that students in rural areas not only use a greater portion of their ESA funds than families in urban and suburban areas, but they also spend smaller portions of their funds on tuition and appear to customize more. This observation coincides with what some argue as a key benefit of ESAs for rural families: because students in rural schools tend to have fewer educational options than students in urban and suburban schools (Catt & Shaw, 2018), ESAs will increase opportunities for rural students to access more educational options.

We also observe some groups of students, such as minority students, using greater shares of their ESAs to pay for tuition compared to white students. One explanation may be that these students are accessing higher tuition schools. On the other hand, families of these groups of students on average may be more income constrained, implying that more supplemental funds

may be necessary to pay for private school tuition. Conversely, families with more disposable income may use ESAs for supplemental services while directing their own income to pay for private school tuition. Unfortunately, current data do not allow further exploration of these rationales.

Although the analysis can provide a sense of the extent which families use ESA funds to access educational opportunities beyond private school tuition, the analysis has the limitation that it does not demonstrate how ESA usage affects student outcomes. We leave this avenue for future research. We expect that ESAs may also incentivize educational providers to innovate and increase the availability of services for families. However, our research is limited in understanding creative innovations by providers and specific techniques learned by families about how to best use ESAs. Additional research on how ESA programs affect the supply-side of education is needed. Yet, our research is a novel first step in understanding the continual usage of ESAs by the same families over time.

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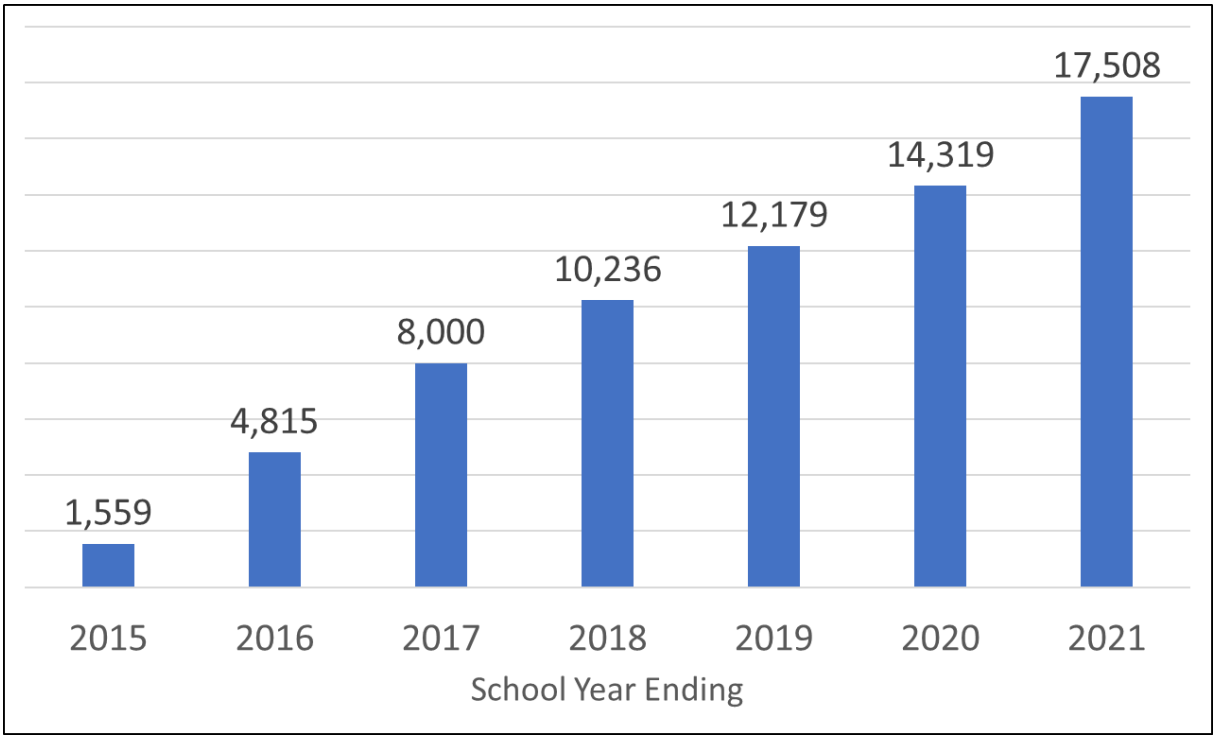
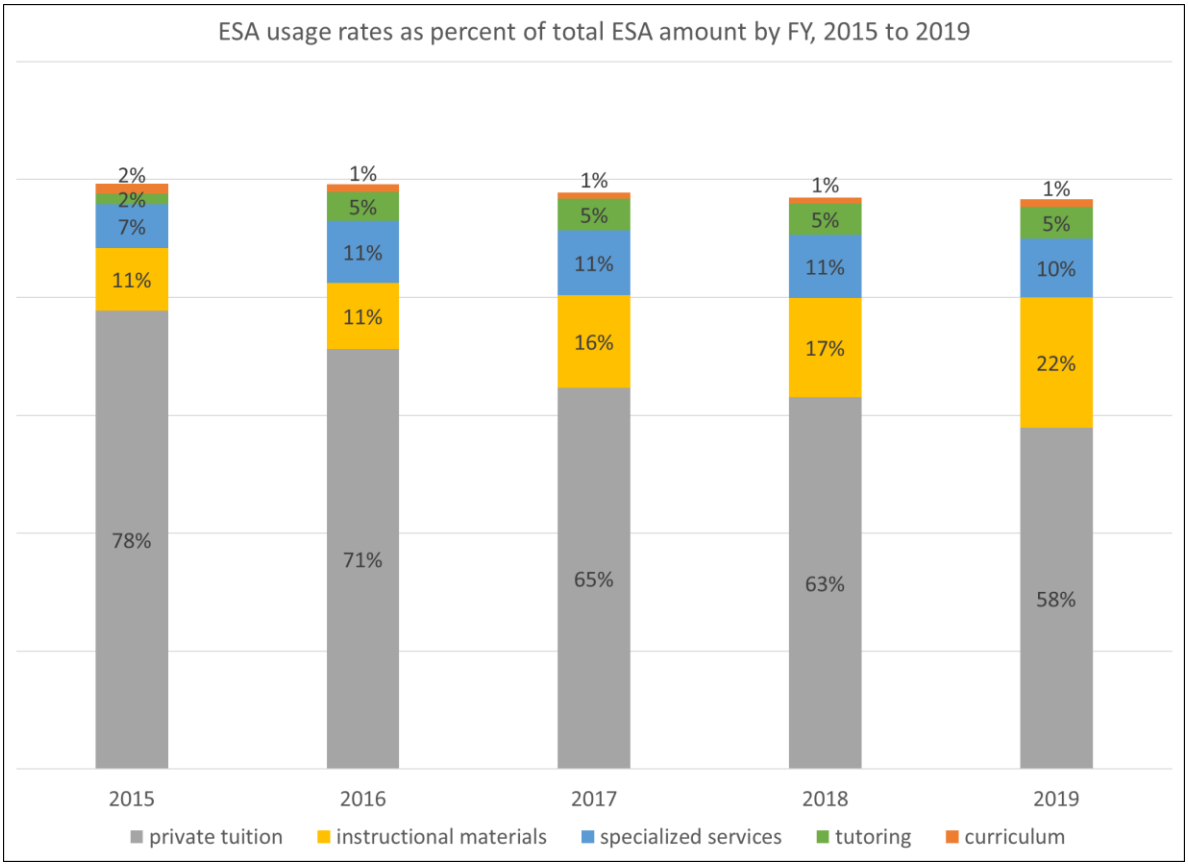
TABLES AND FIGURES

Figure 1: Participation in the Florida Gardiner Scholarship Program by Year



Source: Florida Dept. of Education, "Fact Sheet: Gardiner Scholarship Program," Office of Independent Education & Parental Choice, October 2020, retrieved from: http://www.fldoe.org/core/fileparse.php/5606/urlt/Gardiner.pdf

Figure 2: ESA usage rates as percent of total ESA amount by FY, 2015 to 2019



Source: Author's estimates; Step Up for Students

Table 1: Summary Statistics

Variable	Mean	Std. Deviation
ESA amount	$10,097	$1,380
Amount spent	$8,373	$3,542
Number of transactions	21.46	38.23
Number of different items	3.55	2.86
% expenditures on private tuition	0.57	0.46
% expenditures on instructional materials	0.21	0.34
% expenditures on specialized services	0.11	0.26
% expenditures on tutoring	0.05	0.18
% expenditures on curriculum	0.02	0.08
% expenditures on public services	0.02	0.10
% expenditures on college	0.01	0.08
% expenditures on testing	0.001	0.02
Year in program	1.98	1.07
Asian	0.02	0.13
Black	0.09	0.29
Hawaiian/Pacific Islander	0.001	0.02
Hispanic	0.30	0.46
Multi-Racial	0.05	0.21
Native American	0.002	0.04
White	0.54	0.50
Female student	0.31	0.46
Male student	0.69	0.46
City	0.19	0.40
Rural or town	0.33	0.47
Suburb	0.47	0.50
English is primary language	0.98	0.16
Spanish is primary language	0.02	0.16
Diagnosis - Autism Spectrum Disorder	0.61	0.49
Diagnosis - Intellectual Disability	0.18	0.38
Diagnosis - High-Risk Child	0.06	0.23
Diagnosis - Multiple-Diagnosis	0.05	0.22
Diagnosis - Other	0.04	0.18
Married head of household	0.68	0.46
Divorced head of household	0.13	0.34
Single head of household	0.12	0.32
Separated head of household	0.05	0.21
Widowed head of household	0.01	0.11
School's religion - none or missing	0.81	0.40
School's religion - non-denominational	0.09	0.29
School's religion - Catholic	0.03	0.18
School's religion - Other	0.02	0.15
School's religion - Baptist	0.02	0.15
School's religion - Jewish	0.01	0.10
School's religion - Lutheran	0.01	0.10
School's McKay status	0.35	0.48

Observations: n=32,743

Table 2: Retention in Florida Gardiner Scholarship Program

Nth year in program	2015	2016	2017	2018	2019
1st year in program	1,385	3,187	3,421	3,138	3,119
2nd year in program	0	1,171	2,669	2,814	2,711
3rd year in program	0	0	1,000	2,208	2,370
4th year in program	0	0	0	869	1,919
5th year in program	0	0	0	0	762
Total Observations	1,385	4,358	7,090	9,029	10,881

Table 3: Per-Student ESA Award Amounts, Funds Spent, Categorical Expenditures, and Purchase Types by Year, FY 2015-2019

Variable	**2015**	**2016**	**2017**	**2018**	**2019**	**All years**
ESA award amount	$10,120	$10,250	$9,322	$10,328	$10,346	$10,097
Amount spent	$6,096	$7,470	$7,906	$8,615	$9,127	$8,373
Percent of ESA funds spent	60%	73%	85%	83%	88%	83%
Private tuition	$4,742	$5,320	$5,112	$5,434	$5,283	$5,270
Instructional materials	$644	$836	$1,242	$1,450	$2,019	$1,478
Specialized services	$454	$790	$868	$921	$909	$868
Curriculum	$102	$99	$80	$89	$119	$99
Testing	$2	$4	$4	$4	$4	$4
College	$43	$56	$67	$119	$161	$110
Public services	N/R	$0.45	$107	$139	$145	$114
Tutoring	$109	$363	$427	$460	$488	$434
Number purchases	8.9	13.7	16.9	20.3	30.1	21.5
Number unique purchases (category/type combos)	1.9	2.2	3.5	3.7	4.2	3.5
Number different categorical purchases	1.5	1.6	1.7	1.8	2.0	1.8
Number of students	1,385	4,358	7,090	9,029	10,881	32,743

Table 4: OLS results for ESA usage measured by percent of funds used and frequency of purchases

VARIABLES	Percent of ESA funds used	Frequency of purchases	Unique (type within category) purchases
Second year in program	0.0726***	6.641***	0.415***
	(0.00447)	(0.511)	(0.0365)
Third year in program	0.0899***	8.489***	0.645***
	(0.00562)	(0.643)	(0.0459)
Fourth year in program	0.122***	12.55***	0.939***
	(0.00744)	(0.852)	(0.0608)
Fifth year in program	0.0893***	11.42***	1.132***
	(0.0126)	(1.437)	(0.103)
Rural	-0.0352***	3.546***	0.299***
	(0.00501)	(0.574)	(0.0409)
Suburb	-0.00552	-0.412	0.0211
	(0.00473)	(0.542)	(0.0387)
Asian	-0.0224*	-5.704***	-0.150
	(0.0134)	(1.534)	(0.109)
Black	0.0251***	-7.429***	-0.470***
	(0.00656)	(0.751)	(0.0536)
Hawaiian/Pacific Islander	-0.0152	0.165	0.515
	(0.0705)	(8.072)	(0.576)
Hispanic	0.0188***	-4.113***	-0.347***
	(0.00422)	(0.483)	(0.0345)
Multi-racial	0.0148*	2.696***	0.0379
	(0.00834)	(0.955)	(0.0681)
Native American	-0.0315	-5.513	-0.577
	(0.0518)	(5.936)	(0.423)
Female	-0.00001	0.796*	0.0254
	(0.00384)	(0.439)	(0.0313)
Spanish as primary language	0.0120	-4.845***	-0.578***
	(0.0116)	(1.329)	(0.0948)
Divorced head of household	0.0205***	-3.262***	-0.428***
	(0.00529)	(0.606)	(0.0432)
Separated head of household	0.00122	-4.972***	-0.414***
	(0.00828)	(0.948)	(0.0677)
Single head of household	0.0391***	-3.985***	-0.555***
	(0.00580)	(0.664)	(0.0473)
Widowed head of household	0.0205	-2.114	-0.497***
	(0.0153)	(1.750)	(0.125)
School's McKay status	0.165***	-17.47***	-1.804***
	(0.00478)	(0.548)	(0.0391)
Second quartile - HH income	0.0120**	-0.347	-0.00686
	(0.00497)	(0.569)	(0.0406)
Third quartile - HH income	0.00204	-1.415**	-0.0167
	(0.00501)	(0.573)	(0.0409)
Fourth quartile - HH income	0.0337***	-5.407***	-0.358***
	(0.00507)	(0.581)	(0.0414)
Grade indicators	Yes	Yes	Yes
School year indicators	Yes	Yes	Yes
Diagnosis indicators	Yes	Yes	Yes
School's religious affiliation indicators	Yes	Yes	Yes
Observations	32,686	32,686	32,686
R-squared	0.125	0.115	0.194

Notes: (1) Standard errors are in parentheses, (2) Statistical significance is *** p<0.01, ** p<0.05, * p<0.1, (3) For brevity, table omits estimates for grade level, school year, diagnosis, and school's religious affiliation variables.

Table 5: OLS results for ESA usage by categorical expenditure shares

VARIABLES	(1) Curriculum	(2) Tuition	(3) Instruction	(4) Tutoring	(5) Specialized Services	(6) College
Second year in program	0.00294***	-0.0222***	-0.00726*	0.00963***	0.0145***	0.00183
	(0.00114)	(0.00525)	(0.00438)	(0.00252)	(0.00345)	(0.00117)
Third year in program	0.00448***	-0.0413***	0.00268	0.0130***	0.0229***	0.00317**
	(0.00143)	(0.00661)	(0.00551)	(0.00317)	(0.00434)	(0.00147)
Fourth year in program	0.00537***	-0.0848***	0.0226***	0.0139***	0.0381***	0.00471**
	(0.00190)	(0.00875)	(0.00730)	(0.00420)	(0.00575)	(0.00194)
Fifth year in program	0.00820**	-0.157***	0.0584***	0.0313***	0.0595***	0.00302
	(0.00321)	(0.0148)	(0.0123)	(0.00708)	(0.00971)	(0.00328)
Rural	0.00682***	-0.0336***	0.0451***	0.000228	-0.0177***	-0.00370***
	(0.00128)	(0.00589)	(0.00492)	(0.00283)	(0.00387)	(0.00131)
Suburb	0.00433***	-0.00217	-0.00319	-0.00334	0.00661*	-0.00294**
	(0.00121)	(0.00557)	(0.00464)	(0.00267)	(0.00366)	(0.00124)
Asian	0.00704**	-0.0356**	-0.0205	0.0123	0.0217**	0.0130***
	(0.00342)	(0.0158)	(0.0131)	(0.00756)	(0.0104)	(0.00350)
Black	-0.00608***	0.0888***	-0.0740***	0.0297***	-0.0412***	-0.00647***
	(0.00168)	(0.00772)	(0.00644)	(0.00370)	(0.00507)	(0.00171)
Hawaiian/Pacific Islander	-0.00769	-0.0615	0.0600	0.0467	-0.0268	0.00713
	(0.0180)	(0.0829)	(0.0692)	(0.0398)	(0.0545)	(0.0184)
Hispanic	-0.00694***	0.0673***	-0.0408***	0.00628***	-0.0227***	-0.00264**
	(0.00108)	(0.00496)	(0.00414)	(0.00238)	(0.00326)	(0.00110)
Multi-racial	-0.00199	-0.00966	0.0224***	0.00431	-0.00528	-0.00690***
	(0.00213)	(0.00981)	(0.00819)	(0.00471)	(0.00645)	(0.00218)
Native American	-0.0212	0.00788	0.0145	-0.0556*	0.0827**	-0.0100
	(0.0132)	(0.0610)	(0.0509)	(0.0293)	(0.0401)	(0.0135)
Female	-0.00137	0.000208	0.00979***	0.00237	-0.0103***	0.000487
	(0.000980)	(0.00451)	(0.00377)	(0.00217)	(0.00297)	(0.00100)
Spanish as primary language	-0.00757**	0.122***	-0.0627***	-0.00104	-0.0425***	-0.00319
	(0.00297)	(0.0137)	(0.0114)	(0.00655)	(0.00898)	(0.00303)
Divorced head of household	-0.00916***	0.0735***	-0.0333***	0.00925***	-0.0405***	-0.00228*
	(0.00135)	(0.00623)	(0.00519)	(0.00299)	(0.00409)	(0.00138)
Separated head of household	-0.00820***	0.0778***	-0.0174**	-0.000821	-0.0503***	-0.00246
	(0.00212)	(0.00974)	(0.00813)	(0.00467)	(0.00641)	(0.00216)
Single head of household	-0.0103***	0.114***	-0.0337***	-0.00220	-0.0623***	-0.00376**
	(0.00148)	(0.00682)	(0.00569)	(0.00327)	(0.00448)	(0.00151)
Widowed head of household	-0.00243	0.109***	-0.0521***	-0.00623	-0.0381***	-0.00210
	(0.00390)	(0.0180)	(0.0150)	(0.00863)	(0.0118)	(0.00399)
School's McKay status	-0.0306***	0.515***	-0.266***	-0.0722***	-0.116***	-0.0132***
	(0.00122)	(0.00563)	(0.00469)	(0.00270)	(0.00370)	(0.00125)
Second quartile - HH income	-0.00252**	-0.00920	-0.00924*	0.00428	0.0142***	0.00451***
	(0.00127)	(0.00585)	(0.00488)	(0.00281)	(0.00385)	(0.00130)
Third quartile - HH income	0.000534	-0.0203***	-0.0227***	0.00908***	0.0319***	0.00448***
	(0.00128)	(0.00589)	(0.00491)	(0.00283)	(0.00387)	(0.00131)
Fourth quartile - HH income	-0.00535***	-0.0348***	-0.0727***	0.0283***	0.0758***	0.00599***
	(0.00129)	(0.00597)	(0.00498)	(0.00286)	(0.00392)	(0.00132)
Grade indicators	Yes	Yes	Yes	Yes	Yes	Yes
School year indicators	Yes	Yes	Yes	Yes	Yes	Yes
Diagnosis indicators	Yes	Yes	Yes	Yes	Yes	Yes
Religious affiliation	Yes	Yes	Yes	Yes	Yes	Yes
Observations	32,686	32,686	32,686	32,686	32,686	32,686
R-squared	0.054	0.351	0.182	0.051	0.156	0.016

Notes: (1) Standard errors are in parentheses, (2) Statistical significance is *** p<0.01, ** p<0.05, * p<0.1, (3) For brevity, table omits estimates for grade level, school year, diagnosis, and school's religious affiliation variables.

Table 6: Results from fixed effects models, all students in program at least five years and subsamples of five-year students by urbanicity

Year in program	(1) Percent of ESA funds used	(2) Frequency of purchases	(3) Unique (type within category) purchases	(4) Curriculum	(5) Tuition	(6) Instruction	(7) Tutoring	(8) Specialized Services	(9) Testing	(10) College
Panel A: All students in program for 5 years (n=3,809)										
Second year	0.291***	10.85***	0.498***	-0.0161***	0.0244**	-0.0470***	0.0179**	0.0151	0.000631	0.00409
	(0.0205)	(1.436)	(0.112)	(0.00567)	(0.0117)	(0.0117)	(0.00871)	(0.00960)	(0.00164)	(0.00292)
Third year	0.395***	14.68***	2.158***	-0.0349***	0.0174	-0.0388**	0.0305**	0.00401	0.00232	0.0116***
	(0.0290)	(2.035)	(0.158)	(0.00803)	(0.0166)	(0.0166)	(0.0123)	(0.0136)	(0.00233)	(0.00414)
Fourth year	0.461***	17.78***	2.216***	-0.0385***	0.0193	-0.0384*	0.0193	0.00380	0.00507	0.0212***
	(0.0385)	(2.701)	(0.210)	(0.0107)	(0.0221)	(0.0221)	(0.0164)	(0.0181)	(0.00309)	(0.00549)
Fifth year	0.507***	26.41***	2.475***	-0.0385***	0.00318	-0.0173	0.00163	0.00739	0.00590	0.0296***
	(0.0488)	(3.421)	(0.266)	(0.0135)	(0.0279)	(0.0279)	(0.0207)	(0.0229)	(0.00391)	(0.00696)
Panel B: All students in program for 5 years from urban areas (n=640)										
Second year	0.185***	6.454**	0.468	-0.0275	0.0434	-0.0430	0.00569	0.0225	-0.000268	0.000313
	(0.0551)	(3.166)	(0.313)	(0.0203)	(0.0308)	(0.0339)	(0.0236)	(0.0257)	(0.00332)	(0.00836)
Third year	0.175**	7.766*	2.280***	-0.0324	0.0318	0.00296	0.0288	-0.0256	-0.00254	-0.00296
	(0.0818)	(4.699)	(0.465)	(0.0302)	(0.0457)	(0.0504)	(0.0350)	(0.0381)	(0.00492)	(0.0124)
Fourth year	0.140	8.749	2.292***	-0.0457	0.0192	0.0292	0.0245	-0.0314	-0.00298	0.00744
	(0.110)	(6.291)	(0.622)	(0.0404)	(0.0611)	(0.0675)	(0.0469)	(0.0511)	(0.00659)	(0.0166)
Fifth year	0.0773	14.50*	2.574***	-0.0426	0.0353	0.0919	-0.0207	-0.0546	-0.00396	-0.00412
	(0.143)	(8.231)	(0.814)	(0.0529)	(0.0800)	(0.0883)	(0.0614)	(0.0668)	(0.00862)	(0.0217)
Panel C: All students in program for 5 years from suburban areas (n=1,771)										
Second year	0.323***	9.502***	0.435***	-0.0120	0.0301*	-0.0544***	0.0235*	0.00199	-0.00192	0.0110**
	(0.0286)	(1.878)	(0.151)	(0.00761)	(0.0158)	(0.0160)	(0.0125)	(0.0122)	(0.00222)	(0.00458)
Third year	0.451***	13.36***	1.712***	-0.0248**	0.0412*	-0.0721***	0.0363**	-0.0135	-0.00256	0.0239***
	(0.0393)	(2.577)	(0.208)	(0.0104)	(0.0217)	(0.0220)	(0.0172)	(0.0168)	(0.00305)	(0.00629)
Fourth year	0.549***	15.40***	1.879***	-0.0270**	0.0478*	-0.0815***	0.0330	-0.0197	-0.00299	0.0373***
	(0.0515)	(3.378)	(0.272)	(0.0137)	(0.0285)	(0.0289)	(0.0225)	(0.0220)	(0.00400)	(0.00824)
Fifth year	0.619***	22.67***	1.909***	-0.0291*	0.0370	-0.0720**	0.0253	-0.0286	-0.00242	0.0563***
	(0.0644)	(4.222)	(0.340)	(0.0171)	(0.0356)	(0.0361)	(0.0281)	(0.0274)	(0.00500)	(0.0103)
Panel D: All students in program for 5 years from rural areas (n=1,398)										
Second year	0.255***	15.86***	0.779***	-0.0154*	-0.0159	-0.0174	0.0121	0.0383**	0.00494	-0.00689
	(0.0375)	(3.019)	(0.205)	(0.00923)	(0.0213)	(0.0208)	(0.0144)	(0.0192)	(0.00335)	(0.00448)
Third year	0.339***	20.50***	2.960***	-0.0444***	-0.0671**	0.0249	0.0162	0.0601**	0.0130**	-0.00723
	(0.0565)	(4.551)	(0.309)	(0.0139)	(0.0321)	(0.0313)	(0.0218)	(0.0289)	(0.00505)	(0.00675)
Fourth year	0.373***	25.26***	3.019***	-0.0447**	-0.0837*	0.0418	-0.0137	0.0812**	0.0226***	-0.00609

	(0.0762)	(6.143)	(0.418)	(0.0188)	(0.0434)	(0.0422)	(0.0294)	(0.0390)	(0.00682)	(0.00911)
Fifth year	0.399***	36.68***	3.622***	-0.0455*	-0.119**	0.0740	-0.0399	0.108**	0.0256***	-0.00618
	(0.0971)	(7.820)	(0.531)	(0.0239)	(0.0552)	(0.0538)	(0.0374)	(0.0497)	(0.00868)	(0.0116)

Notes: Notes: (1) Standard errors are in parentheses, (2) Statistical significance is *** p<0.01, ** p<0.05, * p<0.1, (3) For brevity, table omits estimates for all other explanatory variables used in the OLS models.

Appendix Table A: ESA expenditure categories and educational goods and services

College
- Eligible Postsecondary Institution or Program
- Florida 529 College Savings Plan
- Stanley G. Tate Florida Prepaid College Program

Curriculum
- Curriculum / Course
- DOE Approved Online Course Providers
- DOE Approved Virtual Courses

Instructional materials

Public services
- Contracted Public School Services
- Florida Virtual School (FLVS)
- Programs Offered by VPK Program Providers or School Readiness Providers

Specialized services
- Certified Horse Therapy Centers
- Certified Music and Art Therapy
- Specialized After-School Education Program Fees
- Specialized Services
- Specialized Summer Education Program Fees
- Tuition or fees for nationally or internationally recognized training programs for children with neurological disorders or brain damage

Testing
- Annual Educational Evaluation Fees (Home Ed Only)
- Standardized Testing Fees

Private tuition
- Eligible Private School
- Enrollment tuition and fees
- Home Education Tuition/Fees

Tutoring
- Full-Time Private Tutoring Program
- Part-Time Private Tutoring Services
- Transition Services Provided by Job Coaches