

**ARKANSAS CHARTER SCHOOL PROGRAM EVALUATION**  
**SCHOOL YEARS 2011-12 THROUGH 2013-14**

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## Evaluation Executive Summary

### Part 1: Background & Organization of Overall Report

In compliance with state law, the Arkansas Department of Education commissions a yearly evaluation of conversion and open-enrollment charter schools around the state. Arkansas passed its first charter school law in 1995, and annual evaluations have been conducted since the 2005-06 school year, through this current report, which incorporates three years of academic evaluations from 2011-12 to 2013-14. The purpose of the annual evaluation is to provide a snapshot of the status of Arkansas charter schools – their academic outcomes and the interest in them. Except for the first academic year, and through 2010-11, all studies have been conducted by Metis Associates. The most recent Metis report is covered in the literature review.

A research team from the University of Arkansas – Fayetteville, led by Professors Gary Ritter and Patrick Wolf, won the competitive bidding process to perform the evaluation of Arkansas charter schools for the two school years: 2011-12 and 2012-13. The project was later extended to include the 2013-14 school year. The primary part of the proposed evaluation is a rigorous annual academic evaluation. This report will be the first evaluation of Arkansas public charter schools to give year-by-year academic outcomes for the state and for individual charter schools.

The **first section** of this report addresses the question: “What is the evidence of the effects of charter schools on student achievement?” We tackle this question using two analytic strategies. The first is an individual student “matched-twin” study in which we assess the effectiveness of charter schools by asking if students attending these schools perform as well as similar students who attended traditional public schools. Using this strategy, we can study charter effectiveness for three years (2011-12, 2012-13, and 2013-14) for both open-enrollment and district conversion charter schools.

Our second strategy capitalizes on the fact that we have data on all of the students who applied to oversubscribed charter schools for the 2012-13 school year. In this analysis, we find “matched-twins” from the lists of students who applied but were not selected at random via lottery to gain admission into the charters. Because this strategy can only be employed for a subset of the open-enrollment charter schools and for two years, we use this analysis as a robustness check for our more comprehensive 3-year student matching study.

The **second section** of this report describes the parent satisfaction survey administered to parents at all charter schools across the state during the 2015-16 school year. This survey does not allow for comparison to nearby traditional schools, but does provide straightforward descriptive information on the satisfaction level of parents with various aspects of their experiences in both open-enrollment and district conversion charter schools.

The **third and final section** includes our conclusions and policy recommendations based on nearly three years of analyzing Arkansas charter schools.

Part 2: What are the Effects of Charter Schools on Student Achievement?

**Comprehensive 3-Year Statewide Matched Twin Study**

*Overview of Charter School Sample*

This state charter evaluation focuses on charter schools in operation in the state in the following three years: 2011-12, 2012-13, 2013-14. In the final year of our analysis, there were 16,621 students in 48 charter schools across the state. Students in charter schools, particularly in open-enrollment charter schools, were more likely to be Black than were students in traditional public schools across the state (52% of students in open-enrollment charter were Black as compared to 21% of students overall). Students in charters were just as likely as the average student in the state to be eligible for free or reduced lunch, but were less likely to be identified for special education services. In the four columns to the far right of the table, these same figures are presented for the 2015-16 school year, so that readers of the report can observe the increase in the number of charter students over the past two years.

**Executive Summary Table 1: State Demographics by Charter Sector, 2013-14 to 2015-16**

	2013-14				2015-16			
	State Overall	All Charters	Open-Enrollment Charters	Conversion Charters	State Overall	All Charters	Open-Enrollment Charters	Conversion Charters
<b>Number of Students</b>	474,995	16,621	9,327	7,294	476,049	22,769	11,874	10,895
<b>Number of Districts</b>	258	32	17	15	259	40	22	18
<b>Number of Schools</b>	1,083	48	31	17	1,089	60	40	20
<b>Percent White</b>	63	48.5	36	61	62	49.5	37	62
<b>Percent Black</b>	21	40.5	52	29	21	36.5	48	25
<b>Percent Hispanic</b>	11	7.5	7	8	12	10	10	10
<b>Percent Other Races</b>	5	3.5	5	2	5	4.5	6	3
<b>Percent Minority</b>	37	51.5	64	39	38	51	64	38
<b>Percent FRL</b>	61	61	57	65	63	62	59	65
<b>Percent LEP</b>	8	3	2	4	8	3.5	3	4
<b>Percent SPED</b>	11	8.5	6	11	12	9.5	8	11

*Guiding Questions and Methods*

This evaluation provides a study of the academic effect of charter schools using a “matched twin” method. The matching process was conducted using data from the previous year for the Benchmark analyses, and from the previous year relevant to the subject for the End of Course (EOC) analyses. For example, matches for the 11<sup>th</sup> grade Literacy EOC exam were based on 8<sup>th</sup> grade Literacy Benchmark scores and demographics of those students three years prior. Similarly, matches for Geometry were based on Algebra scores and demographics of those students when they took the Algebra EOC. Academic effects are reported for both Math and Literacy at several levels: all schools combined, only conversion charters, only open-enrollment charters, individual schools, and by subgroups. Subgroups include maturity of school, defined as 5 years or older as of the 2011-12 school year, waitlist status, location (Little Rock metro v. other), and family income level of students served (at least or less than the state

average of about 61% FRL). Annual effects are reported for each of the three evaluation years (2011-12, 2012-13, and 2013-14) and average effects for the entire 3 year period are also reported.

It is important to note that results reported for the Benchmark exams refer to students in grades 3-8 (i.e. elementary school and middle school) while the results reported for EOC exams primarily refer to high school students. Finally, because the various assessments analyzed here are reported on different scales, we transform all scores into standardized z-score units with a mean of 0 and a standard deviation of 1, often known as effect sizes. This is standard practice in the education research literature. The interpretation is straightforward: a score of 0 indicates average performance, while positive scores represent above-average performance and negative scores represent below average performance.

These standardized scores will appear in two forms in our report. First of all, we will describe the average achievement, at a given point in time for a given school, using these standardized units. For example, we describe the full sample of students in our three-year matching analysis in Table 8 on page 37 (entitled: Baseline Equivalency for Benchmark Analysis in Math, All Charter Schools, 2011-14). In the far left column, one can see that the “prior year math z-score” in 2011-12 for the 3,662 charter school students in our sample was -0.24 standardized units. The 3,662 matched comparison students, displayed in the adjacent column, had the same prior year math score. This tells us two things: the comparison students were well matched to their charter school peers and students generally enter charter schools with below average math scores (roughly one-quarter of a standard deviation below the state average).

More importantly for this report, these standardized scores will also appear as charter school effects based on multiple regression analysis. The effects will also be described as standardized units, where positive numbers indicate the charter school students have higher scores than do their matched twins in traditional schools and negative numbers indicate that charter school students have lower scores than do their matched twins. For example, in Executive Summary Table 2 below, we see in the second row that open enrollment charter schools have a positive effect in math of +0.025 standardized units. In other words, at the end of each year within the study’s time frame, charter school students experienced greater gains in math to the level of 2.5% of a standard deviation. This represents a small effect.

Throughout the text of the rest of this report, we will describe student test scores and charter school test score effects in standardized units. (*In other studies, similar outcomes might be described in z-score units, effect sizes, or even standard deviations.*)

### Results

The three-year average effect of all charter schools (including open-enrollment and conversion schools) across the state was positive and statistically significant in Math Benchmark test scores, while there was no significant effect on Literacy Benchmark test scores. The positive effect on Math Benchmark scores was largely driven by a significant effect in 2012-13, while the 2011-12 and 2013-14 effects, in isolation, were insignificant. This positive effect in 2012-13 was driven by the open-enrollment schools, and in particular six individual schools with statistically significant positive effects.<sup>1</sup> There was a

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<sup>1</sup> School-level results are available in the Appendix to this report.

positive charter effect in Literacy Benchmarks in 2012-13 but, when combined with the other two years, the three-year average impact was null.

In terms of high school EOC results, three-year average effect of all charter schools on Geometry EOC test scores was statistically significant and negative. The average annual impact of all charter schools on Literacy EOC scores was null. There was a positive Literacy EOC effect in 2012-13, primarily driven by two open-enrollment charter schools with large positive effects. Geometry EOC results appeared negative in all three years, however it should be noted that the fraction of students in the included grades and schools that had adequate matches was relatively low (only about 52% in total), so it may not be representative of the total effect those schools have on secondary students.

This report also separates effects for different subgroups of charter schools. We first present the table summarizing the results, followed by the explanatory narrative.

**Executive Summary Table 2: Summary of Subgroup Effects, 2011-14**

School	Academic Impacts of Public Charter Schools (Average 1-Yr Impacts)				
	Overall	Benchmark Math	Benchmark Literacy	Geometry	11th Grade Literacy
<b>All Charter Schools</b>	<b>0.008 *</b>	<b>0.021 ***</b>	<b>0.005</b>	<b>-0.094 ***</b>	<b>0.000</b>
Open Enrollment	0.023 ***	0.025 ***	0.024 ***	-0.078 ***	0.120 ***
District Conversion	-0.021 ***	0.017	-0.027 **	-0.117 ***	-0.088 ***
<b>Open-Enrollment Charter Schools by Subgroup</b>					
Less Mature (Less than 5 years as of 2011-12)	0.046 ***	0.058 ***	0.045 ***	-0.096 ***	0.058
More Mature (5 years or more as of 2011-12)	0.001	-0.015	0.003	-0.006	0.158 ***
Waitlist	0.034 ***	0.038 ***	0.032 ***	-0.044	0.115 ***
No Waitlist Reported	-0.004	-0.006	0.009	-0.154 ***	0.138 **
Little Rock Metro	0.038 ***	0.047 ***	0.043 ***	-0.098 ***	0.052
Non- Little Rock Metro	0.000	0.000	-0.014	-0.042	0.215 ***
Schools Serving ≥ 61% FRL Students (State Average)	0.054 ***	0.036 ***	0.070 ***	0.032	0.228 ***
Schools Serving < 61% FRL Students (State Average)	0.007	0.018 *	0.002	-0.109 ***	0.106 ***

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

*Open-enrollment v. District Conversion:*

- Math Benchmarks: The three-year average effect of open-enrollment charters was slightly positive (0.03 standardized units), while the three-year average effect of district conversion charters was null. By year, there were significant and positive effects (at the 95% confidence level) exhibited by open-enrollment charter schools in 2012-13 and district conversion charter schools in 2013-14. All other effects were either null or marginally significant.
- Literacy Benchmarks: The three-year average effect of open-enrollment charters was slightly positive (0.02 standardized units), while the three-year average effect of district conversion

charters was slightly negative (-0.03 standardized units). The positive open-enrollment effect was driven primarily by the 2011-12 and 2012-13 results. There was a negative open-enrollment effect in 2013-14, but the three-year average effect remained positive and statistically significant. The negative district conversion effect was largely driven by a negative impact in 2011-12.

- Geometry: The three-year average effect of both types of charter schools was negative: open-enrollment (-0.08 standardized units) and district conversion (-0.12 standardized units). The negative effects in 2011-12 primarily drove negative effects in open-enrollment charter schools. Negative effects in 2011-12 and 2013-14 primarily drove negative effects in district conversion charter schools.
- 11th Grade Literacy: The three-year average effect of open-enrollment charter schools was positive (0.12 standardized units), while the three-year average effect of district conversion charter schools was negative (-0.09). The positive effect in open-enrollment charter schools was primarily driven by positive effects in 2011-12 and 2012-13. The negative effect in district conversion charter schools was primarily driven by a large (-0.24 standardized units) negative effect in 2011-12 and a smaller negative effect in 2013-14.

*By Year of Opening (5 years or older as of 2011-12):*

- Math Benchmarks: The three-year average effect for less mature schools was positive (0.06 standardized units), but the three-year average effect for more mature schools was null. The positive effects for less mature schools were largely driven by the 2012-13 effects. The more mature schools had a significantly negative effect in 2013-14, but combined with the other years this averages out to a null effect.
- Literacy Benchmarks: The three-year average effect for less mature schools was positive (0.05 standardized units), but the three-year average impact for more mature schools was null. The positive impact for less mature schools was driven primarily by significant positive effects in 2011-12 and 2012-13. The year-by-year results for more mature schools indicate that there were positive effects in Literacy in 2011-12 and 2012-13, but negative effects in 2013-14. These result in a null three-year average effect for more mature schools in Literacy.
- Geometry: The three-year average effect for less mature schools was negative (-0.10 standardized units), but the average annual effect for more mature schools was null. The negative effects for less mature schools were largely driven by the 2011-12 effects as well as a marginally significant and negative effect in 2012-13. These were somewhat offset by a marginally significant but positive Geometry effect in 2013-14. Turning to the more mature schools, which had an overall null impact, there was a statistically significant negative effect in 2011-12 (-0.17 standardized units) but null effects in 2012-13 and 2013-14.
- 11<sup>th</sup> Grade Literacy: The three-year average effect for less mature schools was null, while the more mature schools had a positive effect on 11<sup>th</sup> grade Literacy (0.16 standardized units). The null three-year average effect for less mature schools was driven by null effects in all three years. For the more mature schools, the positive average annual effect was driven primarily by positive effects in both 2011-12 and 2012-13.

*By Waitlist Status:<sup>2</sup>*

- **Math Benchmarks:** The three-year average effect for schools with a waitlist was positive (0.04 standardized units), but the three-year average effect for schools without a reported waitlist was null. The positive effect for waitlist schools was driven primarily by a positive 2012-13 effect. The null three-year average effect of the schools without waitlists was the result of a positive effect in 2012-13 being offset by a negative effect in 2013-14.
- **Literacy Benchmarks:** The three-year average effect for schools with a waitlist was positive (0.03 standardized units), but the three-year average effect for schools without a reported waitlist was null. The positive effect for waitlist schools were driven by positive effects in 2011-12 and 2012-13. The null three-year average effect of the schools without waitlists was driven by a positive effect in 2012-13 offset by a negative effect in 2013-14.
- **Geometry:** There was a null three-year average effect for schools with waitlists, but the three-year average effect for schools with no reported waitlist was negative (-0.15 standardized units). For the schools with waitlists, there was a statistically significant negative effect in 2011-12 (-0.14 standardized units), but there were null effects in 2012-13 and 2013-14. For the schools with no reported waitlists, the negative three-year average effect was driven primarily by a negative effect (-0.23 standardized units) in 2011-12.
- **11<sup>th</sup> Grade Literacy:** Schools with waitlists had a positive three-year average effect (0.12 standardized units), as did schools without reported waitlists (0.14 standardized units). For the schools with waitlists, the overall positive effect was driven primarily by positive effects in 2011-12 and 2012-13. For the schools with no reported waitlists, the positive three-year average impact was driven primarily by a large (but only marginally significant effect) in 2012-13 as well as a sizable (0.12 standardized units) but statistically insignificant positive effect in 2011-12.

*By Location (Little Rock Metro v. Other):<sup>3</sup>*

- **Math Benchmarks:** The three-year average effect of open-enrollment charter schools in the Little Rock Metro area was positive (0.05 standardized units). There was a null effect of open-enrollment schools outside this area. The positive three-year average effect for schools in the Little Rock area was driven by positive effects in 2012-13 and 2013-14. The null three-year average impact of the non-Little Rock Metro schools was driven by a positive effect in 2012-13 offset by a negative effect in 2013-14.
- **Literacy Benchmarks:** The average annual effect of open-enrollment charter schools in the Little Rock Metro area was positive (0.04 standardized units). There was a null effect of open-enrollment schools outside this area. The positive three-year average effect for schools in the Little Rock area was driven by positive effects in 2011-12 and 2012-13. The null three-year average impact of the non-Little Rock Metro schools was driven by a positive effect in 2012-13 offset by a negative effect in 2013-14.

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<sup>2</sup> Schools notified the Arkansas Department of Education if they had a waitlist, but there was no verification of whether the others actually had no lottery, so they are listed as “unreported.”

<sup>3</sup> Little Rock Metro charter schools include those serving the Little Rock, N. Little Rock, Jacksonville, and Maumelle areas.

- Geometry: The three-year average effect of the Little Rock Metro schools was negative (-0.10 standardized units), and there was a null effect of schools outside the Little Rock Metro area. The negative three-year average effect for Little Rock Metro schools was driven primarily by a negative effect (-0.18 standardized units) in 2011-12 and a smaller negative effect in 2012-13. For the schools outside this area, there was a null effect overall despite a statistically significant and negative effect in 2011-12. This is largely due to an offsetting large (but not statistically significant) positive effect in 2013-14.
- 11<sup>th</sup> Grade Literacy: The three-year average effect of the Little Rock Metro schools was null, but there was a positive three-year average effect of schools outside the Little Rock Metro area (0.22 standardized units). For the open-enrollment charter schools within the Little Rock Metro area, there was a null effect overall despite a statistically significant and positive effect in 2012-13. The positive three-year average effect for schools outside of this area was driven by positive effects (0.19 – 0.23 standardized units) in each of the three years.

*By Level of Poverty of Student Population Served (Relative to the State Average of 61% FRL):*

- Math Benchmarks: The three-year average effect of the schools serving more low-income students than the state average was positive (0.04 standardized units) and somewhat larger than the effect for schools serving fewer low-income students than the state average was positive (0.02 standardized units).
- Literacy Benchmarks: The three-year average impact of the schools serving more low-income students than the state average was positive (0.07 standardized units). The positive three-year average effect for schools serving more low-income students was driven primarily by a 0.13 standardized unit positive effect in 2012-13 and a smaller positive effect in 2013-14. The schools serving fewer low-income students had a null three-year average effect.
- Geometry: The three-year average effect of the schools serving more low-income students than the state average was null. The schools serving fewer low-income students than the state average had a negative three-year average impact (-0.11 standardized units). The effect of the lower income schools was consistently null across all three years. For the schools serving fewer low-income students, the overall negative three-year average effect was driven primarily by a large (-0.20 standardized units) negative effect in 2011-12.
- 11<sup>th</sup> Grade Literacy: The three-year average effect of the schools serving more low income students than the state average was positive and large (0.23 standardized units), as was the three-year average effect of the schools serving fewer low income students (0.11 standardized units). The positive three-year average effect of the lower income schools was driven primarily by a large (0.63 standardized units) positive effect in 2011-12. For the schools serving fewer low-income students, the positive three-year average effect was driven primarily by positive effects in both 2011-12 and 2012-13. These very large effects are based on a relatively small sample of students; thus, the findings should be taken with caution.

## Lottery Waitlist Matching Study

### *Guiding Questions and Methods*

This report focuses on analyses using lottery and waitlist data available for 2012-13 for oversubscribed open-enrollment charters, with results specific to Benchmark exams (4<sup>th</sup> – 8<sup>th</sup> grade Literacy and Math); EOC exam results are not included in this study. This report uses a subset of charter schools within the geographic area where oversubscribed charter schools are located. As a result, a smaller number of students are included in this analysis than in the more comprehensive 3-Year Statewide Matching study.

We initially proposed to conduct a random assignment study in which the academic results of all of the student applicants who were admitted via lottery to the charter schools would be compared to the academic results of those students who applied but were not admitted. However, limitations of data collection and reporting, along with the fact that a relatively small number of charter school seats in the 2012-13 year were allocated via lottery, restricted our ability to conduct an “experimental” study. As a result, we employed a “matched twin” student matching method, but used the charter school waitlists as the population from which we drew the “matched twins”.

The “matched twin” student matching method was identical to the method used in the 3-Year Statewide Matching analysis to allow for the best possible comparison using all students attending oversubscribed charter schools and all waitlisted students. Charter students in each school were matched with similar traditional public school students who applied for charter schools but were not admitted (waitlisted) in the 2012-13 school year. Separate matches and analyses were conducted for Math and Literacy Benchmark assessments (outcomes in grades 4-8). This current analysis is referred to as the Waitlist-Matching analysis.

Given the data available, this quasi-experimental model is the best form of analysis on the charter students in the sample, since the waitlisted students with whom they are compared similarly were motivated to seek charter school admission. Thus, the primary self-selection threat to the validity of the study – that there are pre-existing but unobservable differences between charter attendees and the comparison group – is not present in this design. Overall, this analysis is somewhat stronger in rigor but smaller in scope than the 3-Year Statewide Matching study, which is somewhat weaker in rigor but larger in scope. If the results from both approaches are similar, we will have reasonable confidence that the findings are unbiased and apply to charter school students generally in Arkansas.

### *Results*

This Waitlist-Matching analysis found statistically significant and positive effects of public charter schools on Math Benchmark test scores and null effects on Literacy Benchmark test scores for 2012-13. Null effects were found for both subject Benchmark exams in 2013-14. These findings appear consistent with the results found in the 3-Year Statewide Matching evaluation (for schools that are in both samples and for the same two years included in both studies). Subgroup analyses of charter networks and charter schools by location indicate that, in general, the KIPP charter schools, outside the Little Rock Metro area, tend to perform better in math than other schools within the Little Rock area. However,

performance of charter networks (eStem, LISA, KIPP) appears to differ among schools within networks. Small differences in results between the matched groups in the two studies, charter-waitlist matches and charter-TPS (TPS refers to Traditional Public School, as compared to Charter public school) matches, could be attributed to the different matches and the number of students in the samples.

Reasonable conclusions that can be drawn from this current study are that the oversubscribed public charter schools in Arkansas have their clearest positive effect on student test scores in math; however, this finding is not consistent over both years of analysis. The school year 2012-13 appeared to be the stronger individual year for charter school performance, compared with 2013-14, which is consistent with the 3-Year Statewide Matching evaluation.

Future studies could improve on the limitations of this quasi-experimental study design as higher-quality and more consistent data are collected on admissions lotteries. A further limitation of this study was the small sample of oversubscribed schools and relatively low student match rates. Most oversubscribed charters are found within the Little Rock metro area. Several charter schools, by design or for other reasons, maintain low student populations and therefore have low numbers of students tested. As most oversubscribed schools are found in the Little Rock metro area, this would indicate greater demand for more charter school seats in this area.

### Part 3: How Satisfied are Parents with Charter Schools?

This portion of the Arkansas charter school evaluation examines parent satisfaction for those parents and guardians who have chosen to enroll their child in an open-enrollment or district conversion charter school.

The survey was administered in the fall of 2015 using both paper-and-pencil and electronic formats. While similar to previous versions of satisfaction surveys used in Arkansas, the most recent version looked to more accurately gauge parent satisfaction on a variety of school characteristics and asked parents to compare their charter school to their child's previous school. The satisfaction survey was provided to all open-enrollment and district conversion charter school leaders with a request to share the survey with all parents at the school and ensure anonymity for respondents. There was a much greater response rate, although still low, among the families from open-enrollment charter schools. Roughly one-fifth of parents with children in charter schools responded to the survey while fewer than 5% of the district conversion families responded. Thus, the results presented here will focus on satisfaction at the open-enrollment charter schools.

One important set of survey items examined the motivations driving parental choices of charter schools. Regarding parental motivation, we found the following:

- Parents who chose open-enrollment charter schools for their student believed that their local schools were adequate but not great; the majority of respondents from open-enrollment charters gave a letter grade of "C" to their local public schools.

- Approximately two-thirds of respondents from open-enrollment charters indicated that a better and more challenging curriculum at the charter was a motivating factor in the choice.
- Roughly half of the respondents also indicated that improved teacher quality and a safer school environment was a motivating factor.

Another set of survey items asked about differences between the charter school and the prior school attended:

- More than half of the respondents indicated that the following school attributes were stronger in the charter than in their prior school: 1. What is taught in school; 2. Amount child has learned; 3. Teacher performance; 4. Student Engagement; 5. School communication about academics and discipline; 6. Discipline in school; 7. Principal performance; 8. Parental involvement.
- More than half of the respondents indicated that the following school attributes were the same as or weaker in the charter than in their prior school: 1. Transportation; 2. School facilities; 3. Extracurricular activities.

A final set of survey items asked about overall satisfaction with the charter school attended:

- More than half of the parents surveyed rated their school an “A” (56%) while another 30% gave their charter school a “B” grade.
- Converting these ratings into a grade point average, or GPA, we found that the parents surveyed gave their charter schools an average GPA of 3.41, compared to the 2.17 grade point average they gave to local schools.
- The areas of greatest satisfaction, in which more than 50% of the respondents reported that they were “very satisfied”, were the following: 1. What is taught in school; 2. Amount child has learned; 3. Teacher performance; 4. Parental involvement; 5. School safety; 6. Principal performance; 7. School communication about academics.

While the results of this survey are by no means conclusive in explaining how much or why parents who are given the opportunity to choose a school outside of their assigned school are satisfied, it does show that parents who can choose a school are reasonably satisfied with their choice relative to their prior schooling options. Future research into parent satisfaction in schools of choice like open-enrollment charter schools in Arkansas should compare levels of satisfaction for charter school parents to that of similar traditional public school parents.

## Part 4: Conclusions and Policy Recommendations

Our general charge was to evaluate the effectiveness of Arkansas charter schools over the past three years. Unable to conduct a “gold-standard” random assignment study due to limitations in random assignment and data collection, we employed multiple analytic strategies as robustness checks for our primary matched-twin study. Thus, the primary focus of our study was to ask the two following questions:

1. Are charters effective in this state?
2. Should we believe these results? Does our strategy of using waitlist students as the comparison population yield similar results as a “matching study” comparing charter students to similar students in TPS schools?

The three-year average effect of all charter schools (including open-enrollment and conversion schools) across the state was positive and statistically significant in Math Benchmark test scores, while there was no significant effect on Literacy Benchmark test scores. The results were negative in high school Geometry and null in high school literacy.

If we consider only open-enrollment charter schools, the story is slightly more positive. There are significant positive effects, although they are small annual effects, for math and literacy in grades 3-8. The magnitude of the effects is approximately 0.025 standardized units per year. The high school results are larger, but based on smaller sample sizes because they are based on only one exam for math (EOC Geometry) and one exam for literacy (Grade 11 Literacy). Here, we find larger negative results in Geometry (-.08) and larger positive results in literacy (+.12).

Our robustness checks – using the waitlist matching method – indicate that we should trust our results. Of course, these modest positive effects mask a great deal of internal variation. Some Arkansas charter schools post consistent positive effects while others do not. Policymakers should certainly view year-to-year results with caution, but use this information along with a variety of other data to inform decisions on how to proceed with charter school reauthorization decisions.

Finally, based on our work in studying the charter lotteries conducted each year in several oversubscribed charter schools, we conclude the report with several recommendations for the administration of and recordkeeping that accompanies student admission lotteries to public charter schools in the state. Our recommendations, focused on transparency, also lend themselves to a greater ability to study charter school effects in the future using admission lotteries.

**SECTION 1: WHAT IS THE EVIDENCE OF THE EFFECTS OF  
CHARTER SCHOOLS ON STUDENT ACHIEVEMENT?**

**ARKANSAS CHARTER SCHOOL ACADEMIC EVALUATION:  
3-YEAR STATEWIDE MATCHING STUDY  
SCHOOL YEARS 2011-12 THROUGH 2013-14**

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### Matching Study Executive Summary

In compliance with state law, the Arkansas Department of Education commissions a yearly evaluation of conversion and open-enrollment charter schools around the state. While Arkansas passed its first charter school law in 1995, there have been annual evaluations since the 2005-06 school year, through this current report, which incorporates three years of academic evaluations from 2011-12 to 2013-14.

This report reviews past evaluations performed by state sponsored groups, academics, and the national study done by the CREDO research center. In response to these findings, this evaluation brings new value by not only using more rigorous statistical methods than previous studies, but also by performing an analysis for all charter schools individually using the most recent data available.

This latest iteration of the state charter evaluation provides a study of the academic effect of all charter schools using a “matched twin” method. These effects are reported for both Math and Literacy at several levels: all schools combined, only conversion charters, only open-enrollment charters, individual schools, and by subgroups. These subgroups include maturity of school, defined as 5 years or older as of the 2011-12 school year, waitlist status, location (Little Rock metro v. other), and income level of students served (at least or less than the state average of about 61% FRL). Gains are reported for three evaluation years: 2011-12, 2012-13, and 2013-14. Average annual effects are also reported. The matching process was conducted using data from the previous year for the Benchmark analyses, and from the previous year relevant to the subject for the End of Course (EOC) analyses. For example, matches for the 11<sup>th</sup> Grade Literacy EOC exam were based on 8<sup>th</sup> grade Literacy Benchmark scores and demographics of those students three years prior. Similarly, matches for Geometry were based on Algebra scores and demographics of those students when they took the Algebra EOC.

The average annual effect of all charter schools (including open-enrollment and conversion schools) across the state was positive and statistically significant in Math Benchmark test scores, while there was no significant effect on Literacy Benchmark test scores. The positive effect on Math Benchmark scores was largely driven by a significant effect in 2012-13, while the 2011-12 and 2013-14 effects, in isolation, were insignificant. This positive effect in 2012-13 was driven by the open-enrollment schools, and in particular six individual charter schools with statistically significant positive effects. School-level results are available in Appendix G of this report. There was a positive charter effect in Literacy Benchmarks in 2012-13 but, when combined with the other two years, the effect averaged across all three periods was null overall.

In terms of EOC results, combined across all the schools, the average annual effect of being in a charter school on Geometry EOC test scores was statistically significant and negative. The average annual effect of all charter schools on Literacy EOC scores was null. There was a positive Literacy EOC effect in 2012-13, primarily driven by two open-enrollment charter schools with large positive effects. Geometry EOC results appeared negative in all three years, however it should be noted that the percent of students in the included grades and schools that had adequate matches was relatively low (only about 52% in total), so it may not be representative of the total effect those schools have on secondary students.

This report also separates *effects* for different types of schools. The results indicate the following (see Table 1 for an overview and the Results section of this report for more details):

*Open-enrollment v. District Conversion:*

- **Math Benchmarks:** The average annual effect of open-enrollment charters was slightly positive (about 0.03 standardized units), but the average annual effect of district conversion charters was null. By year, there were significant and positive effects (at the 95% confidence level) exhibited by open-enrollment charter schools in 2012-13 and district conversion charter schools in 2013-14. All other effects were either null or marginally significant.
- **Literacy Benchmarks:** The average annual effect of open-enrollment charters was slightly positive (about 0.02 standardized units). The average annual effect of district conversion charters was slightly negative (about -0.03 standardized units). The positive open-enrollment effect was driven primarily by the 2011-12 and 2012-13 results. There was a negative open-enrollment effect in 2013-14, but the annual effect over the three years remained positive and statistically significant. The negative district conversion effect was largely driven by the negative effects in 2011-12.
- **Geometry:** The average annual effect of both types of charter schools was negative: open-enrollment (-0.08 standardized units) and district conversion (-0.12 standardized units). The negative effect in open-enrollment charter schools was primarily driven by negative effects in 2011-12. The negative effect in district conversion charter schools was primarily driven by negative effects in 2011-12 and 2013-14.
- **11th Grade Literacy:** The average annual effect of open-enrollment charter schools was positive (0.12 standardized units) and the average annual effect of district conversion charter schools was negative (-0.09). The positive effect in open-enrollment charter schools was primarily driven by positive effects in 2011-12 and 2012-13. The negative effect in district conversion charter schools was primarily driven by a large (-0.24 standardized units) negative effect in 2011-12 and a smaller negative effect in 2013-14.

*By Year of Opening (5 years or older as of 2011-12):*

- **Math Benchmarks:** The average annual effect for less mature schools was positive (0.06 standardized units), but the average annual effect for more mature schools was null. The positive effects for less mature schools were largely driven by the 2012-13 effects. The more mature schools had a significantly negative effect in 2013-14, but combined with the other years this averages out to a null effect.
- **Literacy Benchmarks:** The average annual effect for less mature schools was positive (0.05 standardized units), but the average annual effect for more mature schools was null. The positive average annual effect for less mature schools was driven primarily by significant positive effects in 2011-12 and 2012-13. The year-by-year results for more mature schools indicate that there were positive effects in Literacy in 2011-12 and 2012-13, but negative effects in 2013-14. These average out to a null average annual effect for more mature schools in Literacy.
- **Geometry:** The average annual effect for less mature schools was negative (-0.10 standardized units), but the average annual effect for more mature schools was null. The negative effects for

less mature schools were largely driven by the 2011-12 effects as well as a marginally significant and negative effect in 2012-13. These were somewhat offset by a marginally significant but positive Geometry effect in 2013-14. Turning to the more mature schools, which had an overall null effect, there was a statistically significant negative effect in 2011-12 (-0.17 standardized units) but null effects in 2012-13 and 2013-14.

- 11<sup>th</sup> Grade Literacy: The average annual effect for less mature schools was null, but the more mature schools had a positive effect on 11<sup>th</sup> Grade Literacy (0.16 standardized units). The null average annual effect for less mature schools was driven by null effects in all three years. For the more mature schools, the positive average annual effect was driven primarily by positive effects in both 2011-12 and 2012-13.

*By Waitlist Status:*<sup>4</sup>

- Math Benchmarks: The average annual effect for schools with a waitlist was positive (0.04 standardized units), but the average annual effect for schools without a reported waitlist was null. The positive effects for waitlist schools were driven primarily by a positive 2012-13 effect. The null average annual effect of the schools without waitlists was driven by a positive effect in 2012-13 offset by a negative effect in 2013-14.
- Literacy Benchmarks: The average annual effect for schools with a waitlist was positive (0.03 standardized units), but the average annual effect for schools without a reported waitlist was null. The positive effects for waitlist schools were driven by positive effects in 2011-12 and 2012-13. The null average annual effect of the schools without waitlists was driven by a positive effect in 2012-13 offset by a negative effect in 2013-14.
- Geometry: There was a null average annual effect for schools with waitlists, but schools with no reported waitlist had an average annual effect of -0.15 standardized units. For the schools with waitlists, there was a statistically significant negative effect in 2011-12 (-0.14 standardized units), but there were null effects in 2012-13 and 2013-14. For the schools with no reported waitlists, the negative average annual effect was driven primarily by a negative effect (-0.23 standardized units) in 2011-12.
- 11<sup>th</sup> Grade Literacy: Schools with waitlists had a positive average annual effect (0.12 standardized units), as did schools without reported waitlists (0.14 standardized units). For the schools with waitlists, the overall positive effect was driven primarily by positive effects in 2011-12 and 2012-13. For the schools with no reported waitlists, the positive average annual effect was driven primarily by a large (but only marginally significant effect) in 2012-13 as well as a sizable (0.12 standardized units) but statistically insignificant positive effect in 2011-12.

*By Location (Little Rock Metro v. Other):*<sup>5</sup>

- Math Benchmarks: The average annual effect of open-enrollment charter schools in the Little Rock Metro area was positive (0.05 standardized units). There was a null effect of open-

<sup>4</sup> Schools notified the Arkansas Department of Education if they had a waitlist, but there was no verification of whether the others actually had no lottery, so they are listed as “unreported.”

<sup>5</sup> Little Rock Metro charter schools include those serving the Little Rock, N. Little Rock, Jacksonville, and Maumelle areas.

enrollment schools outside this area. The positive overall effect for schools in the Little Rock area was driven by positive effects in 2012-13 and 2013-14. The null average annual effect of the non-Little Rock Metro schools was driven by a positive effect in 2012-13 offset by a negative effect in 2013-14.

- Literacy Benchmarks: The average annual effect of open-enrollment charter schools in the Little Rock Metro area was positive (0.04 standardized units). There was a null effect of open-enrollment schools outside this area. The positive overall effect for schools in the Little Rock area was driven by positive effects in 2011-12 and 2012-13. The null average annual effect of the non-Little Rock Metro schools was driven by a positive effect in 2012-13 offset by a negative effect in 2013-14.
- Geometry: The average annual effect of the Little Rock Metro schools was negative (-0.10 standardized units), and there was a null effect of schools outside the Little Rock Metro area. The negative overall effect for Little Rock Metro schools was driven primarily by a 0.18 standardized unit negative effect in 2011-12 and a smaller negative effect in 2012-13. For the schools outside this area, there was a null effect overall despite a statistically significant and negative effect in 2011-12. This is largely due to an offsetting large (but not statistically significant) positive effect in 2013-14.
- 11<sup>th</sup> Grade Literacy: The average annual effect of the Little Rock Metro schools was null, but there was a positive average annual effect of schools outside the Little Rock Metro area (0.22 standardized units). For the open-enrollment charter schools within the Little Rock Metro area, there was a null effect overall despite a statistically significant and positive effect in 2012-13. The positive overall effect for schools outside of this area was driven by positive effects (0.19 – 0.23 standardized units) in each of the three years.

*By Level of Poverty of Student Population Served (Relative to the State Average):*

- Math Benchmarks: The three-year average effect of the schools serving more low-income students than the state average was positive (0.04 standardized units) and somewhat larger than the effect for schools serving fewer low-income students than the state average was positive (0.02 standardized units).
- Literacy Benchmarks: The three-year average impact of the schools serving more low-income students than the state average was positive (0.07 standardized units). The positive three-year average effect for schools serving more low-income students was driven primarily by a 0.13 standardized unit positive effect in 2012-13 and a smaller positive effect in 2013-14. The schools serving fewer low-income students had a null three-year average effect.
- Geometry: The three-year average effect of the schools serving more low-income students than the state average was null. The schools serving fewer low-income students than the state average had a negative three-year average impact (-0.11 standardized units). The effect of the lower income schools was consistently null across all three years. For the schools serving fewer low-income students, the overall negative three-year average effect was driven primarily by a large (-0.20 standardized units) negative effect in 2011-12.
- 11<sup>th</sup> Grade Literacy: The three-year average effect of the schools serving more low income students than the state average was positive and large (0.23 standardized units), as was the three-

year average effect of the schools serving fewer low income students (0.11 standardized units). The positive three-year average effect of the lower income schools was driven primarily by a large (0.63 standardized units) positive effect in 2011-12. For the schools serving fewer low-income students, the positive three-year average effect was driven primarily by positive effects in both 2011-12 and 2012-13. These very large effects are based on a relatively small sample of students; thus, the findings should be taken with caution.

A summary of these results, by subgroup is presented in Table 1. School-by-school snapshots for open-enrollment and district conversion charter schools are available in Tables 2 and 3, respectively. Averaged over all years and subjects, there are positive effects in open-enrollment charter schools, but negative effects in district conversion charter schools. In addition, within the open-enrollment charter schools, the positive effects are driven by the less mature schools (less than five years old as of 2011-12), the waitlist schools, the Little Rock Metro schools, and the schools serving a student population that serves a student population with a higher proportion of free- and reduced-lunch (FRL) eligible students than the state average.

This report concludes with notes on the limitations of this study and a call for further research concerning how charter schools can best serve Arkansas and how they can be held accountable. Finally, because lottery style admissions were used at several of the schools for the 2012-13 analysis, the report provides an update about plans for future studies.

**Table 1: Summary of Subgroup Effects, 2011-14**

School	Academic Impacts of Public Charter Schools (Average 1-Yr Impacts)				
	Overall	Benchmark Math	Benchmark Literacy	Geometry	11th Grade Literacy
<b>All Charter Schools</b>	<b>0.008 *</b>	<b>0.021 ***</b>	<b>0.005</b>	<b>-0.094 ***</b>	<b>0.000</b>
Open Enrollment	0.023 ***	0.025 ***	0.024 ***	-0.078 ***	0.120 ***
District Conversion	-0.021 ***	0.017	-0.027 **	-0.117 ***	-0.088 ***
<b>Open-Enrollment Charter Schools by Subgroup</b>					
Less Mature (Less than 5 years as of 2011-12)	0.046 ***	0.058 ***	0.045 ***	-0.096 ***	0.058
More Mature (5 years or more as of 2011-12)	0.001	-0.015	0.003	-0.006	0.158 ***
Waitlist	0.034 ***	0.038 ***	0.032 ***	-0.044	0.115 ***
No Waitlist Reported	-0.004	-0.006	0.009	-0.154 ***	0.138 **
Little Rock Metro	0.038 ***	0.047 ***	0.043 ***	-0.098 ***	0.052
Non- Little Rock Metro	0.000	0.000	-0.014	-0.042	0.215 ***
Schools Serving ≥ 61% FRL Students (State Average)	0.054 ***	0.036 ***	0.070 ***	0.032	0.228 ***
Schools Serving < 61% FRL Students (State Average)	0.007	0.018 *	0.002	-0.109 ***	0.106 ***

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

ARKANSAS CHARTER SCHOOL PROGRAM EVALUATION

**Table 2.** Academic Effects of Open-enrollment Charter Schools, 2011-14

School	Year Opened	Academic Impacts of Open-Enrollment Schools (Average 1-Yr Impacts)				
		Overall	Benchmark Math	Benchmark Literacy	Geometry	11th Grade Literacy
Academics Plus <sup>1</sup>	2001	0.02	-0.037	0.06 **	0.004	-0.099
Arkansas Virtual Academy <sup>2</sup>	2007	-0.077 ***	-0.068 ***	-0.087 ***	N/A	N/A
Arkansas Arts Academy <sup>3</sup>	2001	-0.061 ***	-0.049 *	-0.056 **	-0.222 ***	0.014
Covenant Keepers	2008	0.017	-0.059	0.141 ***	-0.14	N/A
Dreamland Academy <sup>4</sup>	2007	0.293 ***	0.132	0.607 ***	N/A	N/A
eSTEM <sup>5</sup>	2008	0.044	0.065 ***	0.052 **	-0.161 ***	0.045
Haas Hall Academy	2004	0.091 ***	0.46 ***	0.028	0.001	0.301 ***
Imboden Area Charter School	2002	-0.028	0.038	-0.11	N/A	N/A
Jacksonville Lighthouse	2009	0.06 ***	0.083 ***	0.041 *	-0.015	N/A
KIPP Blytheville	2010	0.121 ***	0.095 **	0.148 ***	N/A	N/A
KIPP Delta	2002	0.059 ***	-0.037	0.119 ***	0.203	0.258 ***
LISA Academy	2004	0.02	0.032	0.023	-0.174 **	0.123
LISA Academy North Little Rock	2008	0.038 *	0.099 ***	-0.011	-0.058	0.185
Little Rock Preparatory Academy	2009	0.021	0.031	0.01	N/A	N/A
Northwest Arkansas Classical Acad.	2013	-0.041	-0.072	-0.022	N/A	N/A
Pine Bluff Lighthouse Academy	2011	0.038	0.023	0.051	N/A	N/A
Premier High School of Little Rock <sup>6</sup>	2013	N/A	N/A	N/A	N/A	N/A
Quest Middle School of Pine Bluff	2013	-0.226 **	-0.256 *	-0.199	N/A	N/A
SIA Tech <sup>6</sup>	2011	N/A	N/A	N/A	N/A	N/A
<b>Overall Open-Enrollment</b>		<b>0.023 ***</b>	<b>0.025 ***</b>	<b>0.024 ***</b>	<b>-0.078 ***</b>	<b>0.120 ***</b>

<sup>1</sup> The schools run by Academics Plus are now Maumelle Charter Elementary/High School.

<sup>2</sup> ARVA opened in 2007. The charter was originally approved in 2003, but due to funding issues they did not actual open until the fall of 2007.

<sup>3</sup> Arkansas Arts Academy was previously called Benton County School of the Arts.

<sup>4</sup> Dreamland Academy closed June 30, 2012.

<sup>5</sup> eSTEM combined to one school for analysis purposes.

<sup>6</sup> Premier High School and SIA Tech had less than 15 matches for all relevant analyses, so they have been excluded from this report.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

ARKANSAS CHARTER SCHOOL PROGRAM EVALUATION

**Table 3.** Academic Effects of District Conversion Charter Schools, 2011-14

School	Year Opened	Academic Impacts of District Conversion Schools (Average 1-Yr Impacts)				
		Overall	Benchmark Math	Benchmark Literacy	Geometry	11th Grade Literacy
The Academies at Jonesboro High	2013	0.018	N/A	N/A	-0.037	0.02
Badger Academy <sup>1</sup>	2007	N/A	N/A	N/A	N/A	N/A
Bauxite Miner Academy <sup>1</sup>	2013	N/A	N/A	N/A	N/A	N/A
Blytheville Charter School and ALC <sup>1</sup>	2001	N/A	N/A	N/A	N/A	N/A
Blytheville High School – New Tech <sup>1</sup>	2013	N/A	N/A	N/A	N/A	N/A
Brunson New Vision Charter	2013	0.252 ***	0.3 ***	0.18	N/A	N/A
Cabot ACE	2004	-0.144 ***	0.076	-0.106	-0.31 ***	-0.134 ***
Cloverdale Aerospace Technology	2010	-0.042 ***	-0.053 ***	-0.025	N/A	N/A
Cross County Elem. Tech. Academy	2012	-0.009	-0.077	0.063	N/A	N/A
Cross County New Tech HS	2011	0.009	-0.088	-0.015	0.141 *	0.004
Eastside New Vision <sup>2</sup>	2012	N/A	N/A	N/A	N/A	N/A
Lincoln ACE <sup>1</sup>	2009	N/A	N/A	N/A	N/A	N/A
Lincoln Middle Acad. of Excellence	2010	-0.059 ***	0.014	-0.155 ***	N/A	N/A
Lincoln High School New Tech	2012	-0.08 **	-0.271 ***	0.041	0.054	-0.189 ***
Mtn. Home High School Career Acad.	2003	-0.216 ***	N/A	N/A	-0.494 ***	-0.103 ***
Oak Grove Health, Wellness, Enviro.	2009	0.066	0.22 ***	-0.115	N/A	N/A
Osceola STEM Academy	2012	0.057	0.096 **	-0.007	0.096 **	-0.007
Ridgeroad Charter Middle School	2003	0.109 ***	0.199 ***	-0.017	N/A	N/A
Rogers New Tech. High School	2013	-0.391 ***	N/A	N/A	-0.391 ***	N/A
Vilonia Acad. of Service and Tech.	2007	0.075 **	0.158 ***	0.011	N/A	N/A
Vilonia Academy of Technology	2004	0.029	0.183 *	-0.058	N/A	N/A
Washington Academy	2013	0.039	N/A	N/A	0.166	-0.31
<b>Overall District Conversion</b>		<b>-0.0212 ***</b>	<b>0.017</b>	<b>-0.027 **</b>	<b>-0.117 ***</b>	<b>-0.088 ***</b>

<sup>1</sup>Badger Academy, Bauxite Miner Academy, Blytheville Charter School and ALC, Blytheville High School – New Tech, and Lincoln ACE had less than 15 matches for all relevant analyses, so they have been excluded from this report.

<sup>2</sup>Eastside New Vision Charter is K-3 only so was excluded from the 4-8 Benchmark Analysis.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

## Introduction

Educational choice as a school improvement strategy has been seriously contemplated since the 1960s. Providing choice to families and students who otherwise are often subject to the monopolistic traditional public schools could, in theory, create competition that spurs innovation in traditional public schools. Nobel laureate economist Milton Friedman from these early days was encouraging policy makers

to “introduce competition and give the customers alternatives”<sup>6</sup> in the education sector, saying that the “injection of competition would do much to promote a healthy variety of schools.”<sup>7</sup>

One prominent form of school choice is public charter schooling, developed in Minnesota in the early 1990s. Charter schools are unique public schools that are allowed the freedom to be more innovative while being held accountable for advancing student achievement. Because they are public schools, they are open to all children, do not charge tuition, and do not have special entrance requirements.<sup>8</sup> These schools provide parents with a public school option to the traditional public schools in their neighborhoods. Currently, there is no national charter school legislation, though 42 states and the District of Columbia have charter school laws, and charter school support in each state varies widely.<sup>9</sup>

From these early roots, states across the country have responded with their own type of charter laws that allow for the emergence of individual charters schools as well as charter management organizations (CMOs) that manage multiple charter schools. Arkansas was one of those states, passing its first charter school law in 1995 (Act 1126)<sup>10</sup> allowing conversion charter schools, and then a more general open-enrollment charter law in 1999 (Act 890).<sup>11</sup> The first open-enrollment charter school opened in Arkansas in 2001, and two open-enrollment charter schools have continuously been in operation since that time: Academics Plus and Benton County School of the Arts, now called Arkansas Arts Academy.<sup>12</sup> <sup>13</sup> Conversion charter schools were slower to form; the earliest continually running school of this type was founded in 2003: Mountain Home High School Career Academy.<sup>14</sup>

Since the institution of the original Arkansas charter school laws, the number of charter schools has grown across the state from serving students in the state’s largest city, the state capital of Little Rock, to serving more rural communities throughout Arkansas. During the 2011-12 school year (the first evaluation year covered in this report), the Arkansas K-12 public school system was responsible for 468,656 students in 260 school districts (mean enrollment: 1,802, median: 893), including all open-

<sup>6</sup> Friedman, Milton. Newsweek. "The Friedmans on School Choice." *The Friedman Foundation for Educational Choice*, n.d. Web. 07 August 2014. <<http://www.edchoice.org/The-Friedmans/The-Friedmans-on-School-Choice>>.

<sup>7</sup> Friedman, Milton. Cap and Free. "The Friedmans on School Choice." *The Friedman Foundation for Educational Choice*, n.d. Web. 07 August 2014. <<http://www.edchoice.org/The-Friedmans/The-Friedmans-on-School-Choice>>.

<sup>8</sup> National Alliance for Public Charter Schools. "What are Public Charter Schools?" Web. 15 December 2014. <<http://www.publiccharters.org/get-the-facts/public-charter-schools/>>.

<sup>9</sup> Center for Education Reform. "Choice & Charter Schools: Laws & Legislation." Web. 15 December 2014. <<https://www.edreform.com/issues/choice-charter-schools/laws-legislation/>>.

<sup>10</sup> Mills, Jonathan N. "The Achievement Effects of Arkansas Open-enrollment Charter Schools." *Journal of Education Finance* 38.4 (2013): 322. <[http://muse.jhu.edu/journals/journal\\_of\\_education\\_finance/v038/38.4.mills.pdf](http://muse.jhu.edu/journals/journal_of_education_finance/v038/38.4.mills.pdf)>.

<sup>11</sup> *Arkansas Quality Charter Schools Act of 2013*, Acts 1999, No. 890. <[http://www.arkansased.org/public/userfiles/Learning\\_Services/Charter%20and%20Home%20School/Charter%20School-Division%20of%20Learning%20Services/Arkansas\\_Quality\\_Charter\\_Schools\\_Act\\_of\\_2013.pdf](http://www.arkansased.org/public/userfiles/Learning_Services/Charter%20and%20Home%20School/Charter%20School-Division%20of%20Learning%20Services/Arkansas_Quality_Charter_Schools_Act_of_2013.pdf)>.

<sup>12</sup> *Open-enrollment*. Arkansas Department of Education, n.d. Web. 13 August 2014. <[http://www.arkansased.org/contact-us/charter-schools/charter\\_school\\_categories/open-enrollment](http://www.arkansased.org/contact-us/charter-schools/charter_school_categories/open-enrollment)>.

<sup>13</sup> The Benton County School of the Arts is now the Arkansas Arts Academy.

<sup>14</sup> *District-Conversion*. Arkansas Department of Education, n.d. Web. 13 August 2014. <[http://www.arkansased.org/contact-us/charter-schools/charter\\_school\\_categories/district-conversion](http://www.arkansased.org/contact-us/charter-schools/charter_school_categories/district-conversion)>.

enrollment charter schools. From these 260 districts, there were 17 open-enrollment charter schools and 12 conversion charter schools, which remain part of the remaining 243 school districts.

By the final year of this report, 2013-14, the Arkansas K-12 public school system was responsible for 474,995 students in 260 districts (mean enrollment: 1,841, median: 889), including all open-enrollment charter schools. In 2013-14, there were 18 open-enrollment charter schools and 18 conversion charter schools, which remain part of the remaining 242 school districts.

More descriptive information about the state's charter schools is in the Data section of this report. Our analysis focuses exclusively on those 41 charter schools open for at least one year during the time period from 2011-12 to 2013-14, although 15 more schools have been chartered since this time (6 open-enrollment and 9 conversion).

This report uses Arkansas state test scores to compare students enrolled in Arkansas charter schools to those students who share similar observable characteristics (grade level, test scores, economic status, minority status, gender, and others) but who are not enrolled in a traditional public school in the state that feeds into that charter school.

The following section will introduce the background of this study, give an introduction to similar studies that have looked at Arkansas charter schools, explain the data that were used for this analysis, explain the methods and rules that governed the analysis, and finally report the results of the study of charter schools for the three-year matching study. Appendices are included at the end of this report to keep the size of the report manageable.

## Background

Since the 2005-06 school year, there has been an annual evaluation of Arkansas charter schools, as commissioned by law. The purpose of the annual evaluation is to provide a snapshot of the status of Arkansas charter schools – their academic outcomes and the interest in them. Except for the first academic year, and through 2010-11, all studies have been conducted by Metis Associates. The most recent Metis report will be covered in the literature review.

A research team from the University of Arkansas – Fayetteville, led by Professors Gary Ritter and Patrick Wolf, won the competitive bidding process to perform the evaluation of Arkansas charter schools for the two school years: 2011-12 and 2012-13. Part of the proposed evaluation is a rigorous annual academic evaluation. Of previous academic evaluations, which will be covered in the literature review, none have given year-by-year academic outcomes for the state or for individual charter schools. This report will be the first evaluation of Arkansas public charter schools to do so.

As part of our contract with the Charter and Home Schools Office of the Arkansas Department of Education (ADE), we have been asked to study the academic effect of Arkansas charter schools of all types for three years (2011-12 to 2013-14). This report focuses only on the “matched twin” analysis. These terms and more will be further described in the Data and Methods section of this report. Additional analyses will be conducted using lottery and waitlist data available for 2012-13 and 2013-14.

Academic performance on the state standardized examinations is the outcome of interest in the analyses. These data are available across school types, both traditional public school and charter public schools, and the tests were taken during the years in question.

## Literature Review

Much ink has been spilt on the subject of charter school academic outcomes. Therefore, this report will consider those papers that have analyzed Arkansas charter schools in the past. These analyses come in two forms: those that reported Arkansas outcomes as a subset of a national analysis, and those that reported only Arkansas outcomes. The two national evaluations that have reported Arkansas outcomes as a subset, included in this literature review, were performed by the Center for Research on Education Outcomes (CREDO) at Stanford University. CREDO is an evaluation unit of Stanford University that focuses on K-12 education reform research, seeking to offer analysis to school leaders and policymakers.<sup>15</sup> Separate groups did the two evaluations limited just to Arkansas. Metis Associates, a consulting-research firm stationed in New York City, under contract with the state, performed one study.<sup>16</sup> A doctoral student, Jonathan Mills, in the Department of Education Reform at the University of Arkansas - Fayetteville, did the other study.

These four studies represent the broad scope of studies that have looked at Arkansas charter schools. After giving a brief overview of each, a summary table of these evaluations will be presented, as well as an explanation of the distinction between previous evaluations and the current study.

## **Arkansas in the Context of National Evaluations**

*CREDO Report, 2009*<sup>17</sup>

While CREDO performed a national evaluation of the charter school populations in 16 states with available data in 2009, the organization also released a separate analysis of Arkansas charter schools only. Using data from five separate years of schooling (2003-04 through 2007-08), the study team estimated the effect size of Arkansas charter schools on academic growth for their particular students.

CREDO used a “Virtual Twin” matching (VTM) method, which will be explained further in this report’s methods section. The study sought to match 4,627 students enrolled in 24 different charter schools to counterparts in the traditional public school sector – which averages out to 925 students per year. Of these students, 88% were matched in Reading and 87% were matched in Math.

This analysis provided outcomes across several different comparisons: effect by simple enrollment, by years of enrollment, by race/ethnicity, by Free or Reduced Lunch status, by special education status, by English Language Learner status, by grade repeating status, and by starting test score deciles.

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<sup>15</sup> "Overview." Center for Research on Education Outcomes (CREDO). Web. 15 August 2014.  
<<http://credo.stanford.edu/aboutOverview.html>>.

<sup>16</sup> “About Us: Our Company.” Metis Associates. Web. 15 August 2014.  
<[http://metisassoc.com/about/our\\_company.html](http://metisassoc.com/about/our_company.html)>

<sup>17</sup> Raymond, Margaret, et al. "Multiple Choice: Charter School Performance in 16 States." Center for Research on Education Outcomes (CREDO) Report (2009). Web. 15 August 2014.  
<[http://credo.stanford.edu/reports/AR\\_CHARTER%20SCHOOL%20REPORT\\_CREDO\\_2009.pdf](http://credo.stanford.edu/reports/AR_CHARTER%20SCHOOL%20REPORT_CREDO_2009.pdf)>.

The overall charter effect, as reported by this CREDO evaluation, was +.02 standardized units in Reading and +.05 standardized units in Math. Both of these findings are statistically significant at the 5% level, and the Math finding is significant at the 1% level. A summary of this report is found in Table 4.

*CREDO Report, 2013*<sup>18</sup>

This 2013 report served as a follow-up to the 2009 CREDO study, evaluating the same states as previously, as well as new states that were available, with data that had been released since the 2009 report. In this report, Arkansas was the only state with high gains for charter school students relative to traditional public school students in the 2009 report but low gains for charters in the 2013 evaluation of Math and Reading results.

Specifically, the second CREDO report focused on growth from the 2006-07 to the 2010-11 school year, the academic year before the focus of this report. Like the 2009 report, CREDO was able to match large numbers of the students, 89% in Reading and 82% in Math, using the same “Virtual Twin” matching (VTM) method as before.

Of the matched students, the mean charter school student started .05 standardized units below the statewide average in Reading and .09 standardized units below the statewide average in Math. After the VTM analysis was done, the report showed that Arkansas charter students saw a -.03 standardized unit effect in both Math and Reading. CREDO also converted this effect into days, saying that this negative result for charter school students was equivalent to losing 22 days of school compared to their counterparts in traditional public schools. The CREDO evaluators noted that school closure rates had some effect on the findings overall, but perhaps less so for Arkansas. Some charter schools that were open for the 2010-11 school year had been closed by the beginning of the 2011-12 school year, and therefore not covered in this report. A summary of this report is found in Table 4.

### Arkansas Specific Evaluations

*Metis Report, 2012*<sup>19</sup>

Annual reports of the status of Arkansas schools have been commissioned going back to the 2005-06 school year. For the 2006-07 through 2010-11 school years, Metis Associates conducted this evaluation. For the 2010-11 analysis, which was published in 2012, Metis conducted surveys and obtained information from 27 charter school administrators, 1,118 parents of charter students, and 5,948 charter students, seeking information on charter mission achievement, academic achievement, and parental satisfaction.

The survey was able to show the areas of greatest emphasis for charter school administrators, who focused on building academic leaders and strong curriculum programs. Administrators further reported

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<sup>18</sup> Raymond, Margaret, et al. "National Charter School Study: 2013." Center for Research on Education Outcomes (CREDO) Report (2013). Web. 15 August 2014.

<<http://credo.stanford.edu/documents/NCSS%202013%20Final%20Draft.pdf>>.

<sup>19</sup> Lopez, Otoniel, et al. "Arkansas Public Charter Schools: Evaluation of Service Impact and Student Achievement." Metis Associates Report (May 2012). Web. 15 August 2014. <[http://www.arkansased.org/public/userfiles/Learning\\_Services/Charter%20and%20Home%20School/Charter%20School-Division%20of%20Learning%20Services/2010\\_2011\\_Charter\\_Schools\\_Evaluation\\_Report\\_FINAL\\_053012\\_3.pdf](http://www.arkansased.org/public/userfiles/Learning_Services/Charter%20and%20Home%20School/Charter%20School-Division%20of%20Learning%20Services/2010_2011_Charter_Schools_Evaluation_Report_FINAL_053012_3.pdf)>.

that the greatest concerns for their schools were the public views of the schools and the availability of public funds for building budgets. Finally, the levels of satisfaction of both parents and students were high, especially in those schools with high levels of parental participation. The Metis group also made suggestions as to the grade level practices that resulted in higher Benchmark examination scores. However, no conclusions were drawn on charter effectiveness. A summary of this report is found in Table 4.

*Mills Study, 2013*<sup>20</sup>

This evaluation considered the academic effect of open-enrollment charter schools in Arkansas on students using panel data from academic year 2002-03 to 2010-11. Using a robust data set with over 1.6 million traditional public school students and over 13 thousand charter school students, the Mills study found small but statistically significant negative test score results for charter school students.

However, as other studies of charter schools have found, this evaluation reported that as a charter school matures in age, these negative results decrease, reaching insignificant or positive significant results by the fourth year, in both Math and Reading tests. A note of interpretation here should be that this fourth-year effect could be caused by several different factors, two of which being that either 1) schools (administrators and teachers) are able to deliver a better product as they learn over the years, or 2) poor schools are closed, fail to keep running, or lose a critical mass of students after three relatively unsuccessful years. These two and other related reasons could contribute to these results.

While the author sought to compare findings with those using similar research methods in other states, he conceded that Arkansas is different not only in its rural composition but also in the comparatively restrictive laws that govern charter schools.<sup>21</sup> A summary of this report is found in Table 4.

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<sup>20</sup> Mills, Jonathan N. "The Achievement Impacts of Arkansas Open-enrollment Charter Schools." *Journal of Education Finance* 38.4 (2013): 320-342.

<sup>21</sup> The laws referred to include caps on the number of charter schools in Arkansas, as well as lower funding for charter schools, particularly with respect to facilities funding. See Policy Briefs, "Charter School Facilities Funding" by the Office for Education Policy: <http://www.officeforeducationpolicy.org/wp-content/uploads/Charter-School-Facilities-Funding.pdf> and "Charter School Authorizers" by the Office for Education Policy: [http://www.officeforeducationpolicy.org/wp-content/uploads/Charter-School-Authorizer\\_Policy-Brief\\_Draft2.pdf](http://www.officeforeducationpolicy.org/wp-content/uploads/Charter-School-Authorizer_Policy-Brief_Draft2.pdf)

**Table 4:** Previous Studies of Arkansas Charter School Academic Effects with Highlighted Outcomes

Study Name by Year	N of Charters (Students)	Years Reported	Methods	Overall Findings
CREDO, 2009	24 (4,627)	2003-08	Matched Twin Analysis	+0.02 Reading +0.05 Math
CREDO, 2013	31 (21,896)	2007-11	Matched Twin Analysis	-0.03 Reading, Math; -22 Days of Learning
Metis, 2012	29 (7,633)	2010-11	Stepwise Regression, Analysis of Covariance (ANCOVA)	No effectiveness conclusions reported
Mills, 2013	31 (13,255)	2001-11	Ordinary Least Squares Regression with Student Fixed Effects	-0.02 to -0.11 overall; Positive gains for school in 5 <sup>th</sup> + Year

### Distinctions of the Current Report

This report provides the first set of unique findings on the academic effect of Arkansas charter schools for the 2011-12 to 2013-14 school years, with specific findings for each school, including both conversion and open-enrollment charters. In addition, results are provided specific to both Benchmark exams (3<sup>rd</sup> – 8<sup>th</sup> grade) and EOC exams (11<sup>th</sup> Grade Literacy and Geometry).

The current study matches or exceeds the rigor of the methods used in previous studies. As commissioned, this report provides an updated one-year analysis of Arkansas charter schools, as opposed to the multi-year studies cited earlier. While this report does uniquely provide school level academic effects, it also provides aggregated effects of all charter schools, all open-enrollment charter schools, and all conversion charter schools. Some of these aggregated effects can be compared to previous studies. Additionally, the subgroup analyses can be compared against their counterparts in other studies. This report uses a similar number of charter schools as previous studies, although it uses a smaller number of students overall. This difference, however, is merely a result of the limited scope of this report as compared to the others cited.

### Data

For this analysis, access to non-identifying student level data for the state of Arkansas was given for the six years from 2008-09 to 2013-14. Non-identifying, in this context, means that no student identifying information is used except for a unique but anonymous ID that was generated by the ADE. Each ID is paired with information for each school year including the school attended, Free and Reduced Lunch (FRL) status, race/ethnicity, gender, English Language Learner (ELL) status, Individual Education Plan (IEP) status, and test scores for Math and Literacy. Data usage complies with Federal Education Rights and Privacy Act (FERPA) regulations and relevant Arkansas regulations.

The test scores that are tied to each student come from four separate Arkansas standardized tests: the Arkansas Comprehensive Testing, Assessment and Accountability Program (ACTAAP, more commonly known as the Benchmark examination) in both Math and Literacy, and the End of Course (EOC) examinations in 11<sup>th</sup> Grade Literacy and Geometry. Benchmark tests are taken by 3<sup>rd</sup> through 8<sup>th</sup>

grade students and serve as Arkansas’ compliance under the Elementary and Secondary Education Act (ESEA) and No Child Left Behind Act (NCLB).<sup>22</sup> EOC tests are given in Algebra, Geometry, Biology, and 11<sup>th</sup> Grade Literacy classes, however the best available matches are for the 11<sup>th</sup> Grade Literacy exam (matched based on 8<sup>th</sup> grade Literacy Benchmark scores) and for Geometry (matched based on Algebra EOC scores, which are taken in the year prior in the majority of cases). Algebra and Biology outcomes were not included in this report due to the difficulty of a consistently available baseline score for matching.

As noted in Table 5, charter students represented about 2.4% to 3.5% of all Arkansas K-12 students depending on the year. Charter students’ share of total enrollment has increased over the three years covered by this report. And while the subpopulation of charter students differs in some observable ways from the state as a whole in that it includes a smaller proportion of low income students but a larger proportion of minority students, the numbers are much closer when comparing charter schools with their local traditional public school districts which serve as their “feeder” districts – those districts where the students would have otherwise been assigned had they not attended the public charter school. Tables 6 and 7 show some of the basic details for open-enrollment and district conversion charter schools, respectively, including the year the school opened and the grade levels served during the three school years covered in this report. Appendix A expands on these school characteristics, showcasing the enrollment of each charter school, the percentage of students who are a minority race/ethnicity, and the percentage of students who qualify for Free or Reduced Lunch (FRL) status.

For all conversion charter schools, the conversion school continues to be a part of the traditional public school district from whence it came. For open-enrollment charter schools, the rules are different: they are created from scratch to be their own school district. Some charter schools are stand-alone organizations, and their school also serves as the entire district (e.g., Academics Plus is the school name and the name of their school district). Other times, one set of schools can be chartered separately, so that the elementary, middle, and high school have separate charters. For example, eSTEM Elementary, Middle, and High Schools are three separate charters and thus three separate districts, though these three charters have been merged into one charter school district since the 2011-12 academic year. The opposite of stand-alone charters are those created by Charter Management Organizations (CMOs) that control many different schools, sometimes around the country. A CMO’s charter school network can operate under one charter (e.g., KIPP Delta has one charter with schools in Helena/W. Helena and in Blytheville<sup>23</sup>) or under multiple charters (e.g., Lighthouse Academies operates schools in Jacksonville and Pine Bluff under different charters<sup>24</sup>).

<sup>22</sup> ACTAAP. Arkansas Department of Education, n.d. Web. 13 August 2014. <<http://www.arkansased.org/divisions/learning-services/student-assessment/actaap>>.

<sup>23</sup> *Our Schools*. KIPP: Delta Public Schools, n.d. Web. 18 August 2014. <<http://www.kippdelta.org/our-schools>>.

<sup>24</sup> *Our Schools*. Lighthouse Academies, n.d. Web. 18 August 2014. <<http://www.lighthouse-academies.org/schools#dropdown-arkansas>>.

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**Table 5.** Student Demographics: Charter Students vs. State Combined, 2011-12 to 2013-14

	<b>Charter Students (11-12)</b>	<b>State (All Students, 11-12)</b>	<b>Charter Students (12-13)</b>	<b>State (All Students, 12-13)</b>	<b>Charter Students (13-14)</b>	<b>State (All Students, 13-14)</b>
Enrollment	11,395	468,656	12,565	471,867	16,568	474,995
Charter as % Total	2.4%		2.7%		3.5%	
FRL %	54%	60%	49%	61%	55%	61%
Minority %	51%	35%	49%	36%	53%	37%
Benchmark % Prof./Advanced	68% (Math)/ 72% (Lit.)	78% (Math)/ 81% (Lit.)	67% (Math)/ 73% (Lit.)	75% (Math)/ 79% (Lit.)	64% (Math)/ 72% (Lit.)	72% (Math)/ 78% (Lit.)
EOC % Prof./Advanced	85% (Alg.)/ 74% (Geo.)/ 75% (Lit.)/ 42% (Bio.)	81% (Alg.)/ 75% (Geo.)/ 68% (Lit.)/ 42% (Bio.)	74% (Alg.)/ 59% (Geo.)/ 66% (Lit.)/ 39% (Bio.)	77% (Alg.)/ 72% (Geo.)/ 70% (Lit.)/ 44% (Bio.)	71% (Alg.)/ 65% (Geo.)/ 70% (Lit.)/ 44% (Bio.)	75% (Alg.)/ 74% (Geo.)/ 72% (Lit.)/ 47% (Bio.)

**Table 6.** Active Open-enrollment Charter Schools, 2011-12 to 2013-14

<b>Charter School</b>	<b>School Type</b>	<b>Year Opened</b>	<b>Grades Served in 11-12 (N=18)</b>	<b>Grades Served in 12-13 (N=17)</b>	<b>Grades Served in 13-14 (N=20)</b>
Academics Plus <sup>1</sup>	Open-enrollment	2001	K-12	K-12	K-12
Arkansas Virtual Academy <sup>2</sup>	Open-enrollment	2007	K-8	K-8	K-8
Arkansas Arts Academy <sup>3</sup>	Open-enrollment	2001	K-12	K-12	K-12
Covenant Keepers	Open-enrollment	2008	6-11	6-12	6-8
Dreamland Academy <sup>4</sup>	Open-enrollment	2007	K-5	N/A	N/A
eSTEM Elementary <sup>5</sup>	Open-enrollment	2008	K-4	K-4	K-4
eSTEM High School <sup>5</sup>	Open-enrollment	2008	9-12	9-12	9-12
eSTEM Middle School <sup>5</sup>	Open-enrollment	2008	5-8	5-8	5-8
Haas Hall Academy	Open-enrollment	2004	8-12	8-12	8-12
Imboden Area Charter School	Open-enrollment	2002	K-8	K-8	K-8
Jacksonville Lighthouse	Open-enrollment	2009	K-8	K-9	K-10
KIPP Blytheville	Open-enrollment	2010	5-6	4-7	4-8
KIPP Delta	Open-enrollment	2002	K-3, 5-12	K-12	K-12
LISA Academy	Open-enrollment	2004	6-12	6-12	6-12
LISA Academy North Little Rock	Open-enrollment	2008	K-11	K-12	K-12
Little Rock Preparatory Academy	Open-enrollment	2009	K-7	K-8	K-8
Northwest Arkansas Classical Academy	Open-enrollment	2013	N/A	N/A	K-8
Pine Bluff Lighthouse Academy	Open-enrollment	2011	K-4	K-5	K-6
Premier High School of Little Rock <sup>6</sup>	Open-enrollment	2013	N/A	N/A	9-12
Quest Middle School of Pine Bluff	Open-enrollment	2013	N/A	N/A	5-8
SIA Tech <sup>6</sup>	Open-enrollment	2011	9-12	10-12	9-12

<sup>1</sup>The schools run by Academics Plus are now Maumelle Charter Elementary/High School.

<sup>2</sup>ARVA opened in 2007. The charter was originally approved in 2003, but due to funding issues they did not actual open until the fall of 2007.

<sup>3</sup>Arkansas Arts Academy was previously called Benton County School of the Arts.

<sup>4</sup>Dreamland Academy closed June 30, 2012.

<sup>5</sup>eSTEM combined to one school for analysis purposes.

<sup>6</sup>Premier High School and SIA Tech had less than 15 matches for all relevant analyses, so they have been excluded from this report.

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**Table 7.** Active District Conversion Charter Schools, 2011-12 to 2013-14

Charter School	School Type	Year Opened	Grades Served in 11-12 (N=12)	Grades Served in 12-13 (N=14)	Grades Served in 13-14 (N=18)
Badger Academy <sup>1</sup>	Conversion	2007	7-12	7-12	7-12
Bauxite Miner Academy <sup>1</sup>	Conversion	2013	N/A	N/A	6-12
Blytheville Charter School and Alternative Learning Center <sup>1</sup>	Conversion	2001	7-12	7-12	N/A
Blytheville High School – A New Tech School <sup>1</sup>	Conversion	2013	N/A	N/A	9-12
Brunson New Vision Charter	Conversion	2013	N/A	N/A	4-5
Cabot Academic Center for Excellence (ACE)	Conversion	2004	7-12	7-12	7-12
Cloverdale Aerospace Technology Conversion Charter Middle School	Conversion	2010	6-8	6-8	6-8
Cross County Elementary Technology Academy	Conversion	2012	N/A	K-6	K-6
Cross County New Tech High School	Conversion	2011	7-12	7-12	7-12
Eastside New Vision Charter School <sup>2</sup>	Conversion	2012	N/A	K-3	K-3
Lincoln Academic Center of Excellence (ACE) <sup>1</sup>	Conversion	2009	K-12	N/A	N/A
Lincoln Middle Academy of Excellence	Conversion	2010	5-6	5-6	5-6
Lincoln High School New Tech	Conversion	2012	N/A	8-12	8-12
Mountain Home High School Career Academy	Conversion	2003	9-12	9-12	9-12
Oak Grove Health, Wellness, and Environmental Science School	Conversion	2009	K-4	K-4	N/A
Osceola STEM Academy	Conversion	2012	N/A	5-8	5-8
Ridgeroad Charter Middle School	Conversion	2003	7-8	N/A	N/A
Rogers New Technology High School	Conversion	2013	N/A	N/A	9-10
The Academies at Jonesboro High School	Conversion	2013	N/A	N/A	9-12
Vilonia Academy of Service and Technology	Conversion	2007	5-6	5-6	5-6
Vilonia Academy of Technology	Conversion	2004	2-4	2-4	2-4
Washington Academy	Conversion	2013	N/A	N/A	9-12

<sup>1</sup>Badger Academy, Bauxite Miner Academy, Blytheville Charter School and ALC, Blytheville High School – New Tech, and Lincoln ACE had less than 15 matches for all relevant analyses, so they have been excluded from this report.

<sup>2</sup>Eastside New Vision Charter is K-3 only so it was excluded from the 4-8 Benchmark Analysis.

## Methods

This Academic Effect study of Arkansas Charter Schools uses a “matched twin” method to allow for the best possible comparison using all charter schools and students in their feeder districts. This study will be supplemented by a “matched twin” analysis limited to the smaller sample of students that were subject to charter school lotteries.

What does it mean to create a “matched twin”? The goal of this method is to create a set of students that are in traditional public schools but are essentially the same as the group of public charter school students when comparing observable characteristics such as income and race/ethnicity.

In order to complete the matching process for open-enrollment charter schools, ADE-provided documents were used to determine which traditional public school districts the charter students would have been assigned to had they not gone to the charter school during the 2011-12 school year. From these documents, the set of feeder districts into each charter school was identified from which “matched twin” students were drawn. Many charter schools, but especially the Arkansas Virtual Academy, drew students from a wide array of districts, thus making it difficult to find the best population from which to make “matched twins.” For this reason, this analysis uses a set of rules to narrow the set of students from which twins are drawn, thus allowing for a better comparison with Arkansas charter school students.

The rules are as follows:

1. “Feeder” districts for each charter school district are ordered from the highest number of students provided to the lowest number of students provided;
2. Districts giving the most students are chosen to be a part of the analysis until 90% of the charter district’s student body is represented;<sup>25</sup>
3. If, while adding districts to the list from which to draw “matched twins” for each student, the percent of students does not reach 90%, but the next district to be added adds less than 10 students, then the addition of districts to the list ceases.<sup>26</sup> Otherwise, districts continue to be added until 90% of the charter district’s student body is represented.

For creating the matching process group for district conversion charter schools, special rules are needed since only students from within the host district are allowed to attend a district conversion charter school. However, some districts have “competition” between traditional public schools and conversion charter schools – where at least one school of each kind serves students of the same grade classification (e.g., each serves 3<sup>rd</sup> grade students). For those conversion charters that do not have “competing” schools within their district, surrounding school districts are used as the pool of potential matches. Therefore, each district has their own unique comparison group from which to draw “matched twins” for comparison. Once the list of feeder districts (or feeder schools in the case of “competitive” district conversion charters)

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<sup>25</sup> In one instance, this was accomplished by one feeder district, as LISA Academy receives 92% of its students from the Little Rock School District, but the other charter school districts all required multiple districts to at least meet the 90% threshold.

<sup>26</sup> This rule is only used twice for the Arkansas Virtual Academy and SIA Tech. The district list in Appendix B gives the detailed findings of this process.

was created for the 2011-12 school year based on ADE-provided documents, the same feeders were used consistently for all three years of this study.

The remainder of the matching process is the same for conversion and open-enrollment charter students. Students who have received the “treatment” of being in a charter school are matched on observable characteristics from the previous school year (or in the case of some EOC tests, the year in which that student took the last relevant in-subject test), so that the academic growth they experience in 2011-12 can be properly studied. For those students who are not promoted from one grade to the next, accommodations are made to match properly, as described in step 1 below. Using the group of students that has been identified for each charter student group, treatment students are matched with students in the traditional public school using the following matching procedure (fully outlined in Appendix C):

**Benchmark Matching Process (Conducted Separately for Math and Literacy)**

1. Students are first matched with a student in the same grade in both the outcome year and baseline or matching year (generally the year before).
2. For the Math and Literacy analyses, separately, all students are matched based on previous year scores on the same subject test, rounded to the nearest 0.01 z-score unit. The other subject test score is used as part of the propensity score (defined below in step 3) in step 4, as having a matched test score in the same subject is more relevant for controlling for prior performance. Therefore, the Math analysis matches first on Math examination scores and later factors in literacy scores, while the Literacy analysis matches first on Literacy examination scores and later factors in Math scores.
3. A propensity score is then created using FRL status (using all three designations: free lunch, reduced lunch, and paid lunch), race/ethnicity (African-American, Asian-American or Native Hawaiian/Pacific Islander, Hispanic-American, Native American, White, or “Two or more races”), gender, and the “other” test score (Literacy for the Math analysis and Math for the Literacy analysis). It is used to estimate the probability of a student receiving the intervention of interest. Certain racial categories in the state are rather small, so in some cases they were grouped such as: Asian-American (about 1.5%) and Pacific Islander (0.6%).
4. Finally, all matches are based on guaranteeing exact matches from step 1 and 2, and the closest available propensity score match from step 3.<sup>27</sup>

**Geometry EOC Matching Process**

1. Students are first matched with a student in the same grade in both the outcome year and baseline or matching year (generally the year before).
2. All students are matched based on previous year scores on the algebra exam, rounded to the nearest 0.01 z-score unit.
3. A propensity score is then created using FRL status (using all three designations: free lunch, reduced lunch, and paid lunch), race/ethnicity (African-American, Asian-American or Pacific Islander, Hispanic-American, Native American, White, or “Two or more races”), and gender.

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<sup>27</sup> If the sample size for any particular analysis was less than 15, those schools were omitted.

4. Finally, all matches are based on guaranteeing exact matches from step 1 and 2, and the closest available propensity score match from step 3.

#### **11<sup>th</sup> Grade Literacy EOC Matching Process**

1. Students had to have test scores in both 11<sup>th</sup> Grade Literacy and 8<sup>th</sup> Grade Literacy three years prior. Thus, if a student skipped a grade or was retained, they would not be included here.
2. All students are matched based on 8<sup>th</sup> Grade Literacy exam scores, three years prior, rounded to the nearest 0.01 z-score unit.
3. A propensity score is then created using FRL status (using all three designations: free lunch, reduced lunch, and paid lunch), race/ethnicity (African-American, Asian-American or Pacific Islander, Hispanic-American, Native American, White, or “Two or more races”), and gender.
4. Finally, all matches are based on guaranteeing exact matches from step 2, and the closest available propensity score match from step 3.

In order to test whether or not this process worked for the purposes of conducting an appropriate comparison, a baseline equivalency analysis is conducted to show how similar the two groups are to each other. The average measure of each of the observable variables is reported for both the charter “treatment” group and for the “matched twin” comparison group. Any difference between the two is reported, and the statistical p-value is reported to show if that difference is statistically significant. P-values below 0.05 indicate statistically significant differences that might raise concerns about the comparability of the samples. For major comparisons, shown in Tables 8-16, in some instances broader matches were used in order to capture a large enough sample size for the analysis. For this reason, in all cases, and especially in cases where there are significant differences at baseline, more confidence should be placed in the regression results which include only the matched sample but further control for any differences in baseline observable characteristics in the comparison.

Tables 8 and 9 show the Math and Literacy baselines, respectively, for all charter schools administering Benchmark exams across the state, for each of the three years. The overall equivalency is made by aggregating all charter students with their “matched twin” matches to create one large database for analysis. For the combined set of matches for all charter schools, it appears that there were some significant differences in the percent of FRL students and minority students, although these differences were slight in size. In 30 total comparisons of baseline characteristics for which the two samples might differ (five characteristics in each of six years), there are statistically significant differences in four cases, which is only slightly more than the three significant differences expected to occur with at least 90 percent confidence by mere chance.

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**Table 8.** Baseline Equivalency for Benchmark Analysis in Math, All Charter Schools, 2011-14

	2011-12			2012-13			2013-14		
	Charter	Comparison	Difference	Charter	Comparison	Difference	Charter	Comparison	Difference
Number of Observations	3,662	3,662	-	4,255	4,255	-	4,905	4,905	-
Average Grade	6.31	6.31	-	6.22	6.22	-	6.16	6.16	-
Prior Year Math Z-Score	-0.24	-0.24	(0.00)	-0.25	-0.25	(0.00)	-0.17	-0.17	(0.00)
Prior Year Literacy Z-Score	-0.18	-0.18	0.01	-0.16	-0.18	0.02	-0.14	-0.13	(0.02)
% FRL	0.62	0.62	(0.00)	0.61	0.63	(0.02) *	0.62	0.62	0.00
% Minority	0.62	0.60	0.02	0.59	0.57	0.02	0.56	0.56	0.01
% Female	0.52	0.51	0.00	0.51	0.51	0.00	0.50	0.49	0.00

*\*p<0.10, \*\*p<0.05, \*\*\*p<0.01*

**Table 9.** Baseline Equivalency for Benchmark Analysis in Literacy, All Charter Schools, 2011-14

	2011-12			2012-13			2013-14		
	Charter	Comparison	Difference	Charter	Comparison	Difference	Charter	Comparison	Difference
Number of Observations	3,566	3,566	-	4,085	4,085	-	4,583	4,583	-
Average Grade	6.32	6.32	-	6.20	6.20	-	6.19	6.19	-
Prior Year Math Z-Score	-0.19	-0.20	0.01	-0.19	-0.17	(0.01)	-0.09	-0.12	0.03
Prior Year Literacy Z-Score	-0.14	-0.14	(0.00)	-0.10	-0.10	(0.00)	-0.05	-0.05	(0.00)
% FRL	0.61	0.63	(0.02) *	0.60	0.64	(0.04) ***	0.84	0.84	(0.00)
% Minority	0.62	0.59	0.02 **	0.59	0.43	0.17	0.57	0.55	0.01
% Female	0.52	0.52	0.01	0.51	0.50	0.01	0.51	0.51	0.00

*\*p<0.10, \*\*p<0.05, \*\*\*p<0.01*

Tables 10 and 11 show the baseline equivalency tables for all charter school and comparison groups regarding the Geometry EOC and 11<sup>th</sup> Grade Literacy EOC analyses, respectively. For the combined set of matches for all charter schools, again there were some statistically significant differences in the proportion of FRL students and minority students (three significant differences when two or three may be expected by chance), so more confidence should be placed in the regression results which include only the matched sample but control for baseline observable characteristics as well.

**Table 10.** Baseline Equivalency for Geometry EOC Analysis (Matched on Algebra Score), All Charter Schools, 2011-14

	2011-12			2012-13			2013-14		
	Charter	Comparison	Difference	Charter	Comparison	Difference	Charter	Comparison	Difference
Number of Observations	483	483	-	453	453	-	708	708	-
Average Grade	9.37	9.37	-	9.54	9.54	-	9.73	9.73	-
Algebra Z-Score	0.12	0.13	(0.00)	0.11	0.12	(0.01)	-0.05	-0.05	(0.00)
% FRL	0.42	0.47	(0.05)	0.43	0.53	(0.10) ***	0.61	0.47	0.15
% Minority	0.34	0.32	0.02	0.64	0.63	0.01	0.44	0.35	0.09 ***
% Female	0.54	0.56	(0.02)	0.54	0.55	(0.02)	0.48	0.48	0.01 0.8

*\*p<0.10, \*\*p<0.05, \*\*\*p<0.01*

**Table 11.** Baseline Equivalency for 11<sup>th</sup> Grade Literacy EOC Analysis (Matched on 8<sup>th</sup> Grade Literacy), All Charter Schools, 2011-14

	2011-12			2012-13			2013-14		
	Charter	Comparison	Difference	Charter	Comparison	Difference	Charter	Comparison	Difference
Number of Observations	459	459	-	566	566	-	866	866	-
Average Grade	11.00	11.00	-	11.00	11.00	-	11.00	11.00	-
8th Grade Literacy Z-Score	0.39	0.40	(0.00)	0.41	0.41	(0.00)	0.24	0.24	(0.00)
% FRL	0.46	0.48	(0.02)	0.46	0.50	(0.03)	0.54	0.53	0.01
% Minority	0.26	0.27	(0.01)	0.28	0.30	(0.01)	0.39	0.35	0.05 *
% Female	0.58	0.56	0.02	0.56	0.56	0.00	0.53	0.55	(0.01)

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

For further detail on baseline equivalency, see Appendix D, which includes baseline equivalency tables for Open-enrollment Charters, District Conversion Charters, and Appendix J that includes school-level baseline equivalency tables as part of the school-level results.

Once the baseline equivalency is established, the resulting matches can be sent through the gauntlet of statistical tests to see how much of the academic growth for students can be attributed to attending individual charter schools, specific types of charter schools, or all charter schools combined. The method of choice that will be presented is regression analysis.

## Results

In this section, the results of the evaluation are presented for all schools, only conversion charter schools, only open-enrollment charter schools, and for different subgroups. Throughout, certain qualifications and explanations are provided to properly frame these results.

First, this report describes the size of the sample being analyzed as compared to the total number of students that attend the charter schools being analyzed, and more importantly, to the number of students in the included grades in those schools. Tables 12 and 13 show the enrollment in all the charter schools included in the Math Benchmark and Literacy Benchmark analyses, respectively. While the number of students in charter schools differed annually, between 10,000 and 13,000 charter school students attended schools that were included in the Benchmark analyses in any given year. Of these, about 5,000 to 7,000 were actually in grades 4-8 and were eligible for matching. Of these, about 66% to 74% were actually included in any given analysis.

The main reason for this sample limitation is the matching requirements. Each student in the study must have test scores from both the baseline test year and the outcome year. Reasons for a specific student not being included in the analysis include but are not limited to: being in an untested grade in either the baseline or outcome year, not being enrolled in an Arkansas public school during either year, being in a school with low enrollment and, therefore, restricted information, or if a student missed the test day, among other reasons. Given these reasons, the results should be interpreted as the effects for the matched student population, which may not generalize to the broader student population.

**Table 12.** Academic Effect of All Charter Schools in **Math Benchmarks**, 2011-14

<b>Math Benchmark</b>						
<b>Year</b>	<b>Enrollment in Included Schools</b>	<b>Enrollment in Incl. Schools and Grades</b>	<b>% Enrollment in Included Schools and Grades</b>	<b>Sample Size (Charter Only)</b>	<b>Treatment Coefficient</b>	<b>Sig. Level</b>
2011-12	10,017	5,271	69%	3,662	0.0199	
2012-13	11,352	5,781	74%	4,255	0.0407	***
2013-14	12,704	6,993	70%	4,905	0.0053	
<b>Combined</b>	<b>34,073</b>	<b>18,045</b>	<b>71%</b>	<b>12,822</b>	<b>0.0214</b>	<b>***</b>

\**p*<0.10, \*\**p*<0.05, \*\*\**p*<0.01

**Table 13.** Academic Effect of All Charter Schools in **Literacy Benchmarks**, 2011-14

<b>Literacy Benchmark</b>						
<b>Year</b>	<b>Enrollment in Included Schools</b>	<b>Enrollment in Incl. Schools and Grades</b>	<b>% Enrollment in Included Schools and Grades</b>	<b>Sample Size (Charter Only)</b>	<b>Treatment Coefficient</b>	<b>Sig. Level</b>
2011-12	10,017	5,271	68%	3,566	-0.0002	
2012-13	10,686	5,781	71%	4,085	0.0321	***
2013-14	12,704	6,993	66%	4,583	-0.0143	
<b>Combined</b>	<b>33,407</b>	<b>18,045</b>	<b>68%</b>	<b>12,234</b>	<b>0.0053</b>	

\**p*<0.10, \*\**p*<0.05, \*\*\**p*<0.01

The academic effects represented in Tables 12 and 13 indicate that, meta-analytically averaged over all schools and school years, Arkansas public charter schools demonstrated a slight positive effect (0.02 standardized units) on Math Benchmark scores and no effect on Literacy Benchmark scores. See Appendix E for an explanation of the calculation of these meta-analytical averages. The Math treatment coefficient of 0.0214 indicates a 2% of a standard deviation increase in student test scores from a year of charter schooling, holding all other covariates in the regression model constant. For full regression results see Appendix F, and for a snapshot of school-by-school results for all tests, meta-analytically averaged over all three years, see Appendix G.

In addition to the growth as a percent of a standard deviation, this growth is converted into additional days of learning (Table 14). Additional days of learning are calculated by dividing the growth in the comparison group’s (matched charter students’) test scores in standard deviation terms by 180 days, to obtain their average standardized unit growth per day, and then using this metric to convert the treatment group’s test score growth into a specific number of days.<sup>28</sup> Based on this calculation, students in charter schools experienced growth equivalent to approximately 34.7 days of growth on the Math Benchmarks in 2012-13 and 30.5 days of on the Literacy Benchmarks in 2012-13. No other year’s effects for all charter schools combined were significant. When averaged across the three years, the average annual effect on Math Benchmark exams is about 19.1 days, and the average annual effect on Literacy Benchmark exams is about 5.0 days, although this average annual Literacy effect is not statistically significant.

<sup>28</sup> Additional Days of Learning = Standard Deviation of Growth/Conversion Factor where:  
Conversion Factor = Mean of the Control Group’s: [(Year<sub>1</sub> Score – Year<sub>0</sub> Score)/ st. dev.(Year<sub>1</sub> Score)]/180

**Table 14.** Academic Effect of All Charter Schools on Benchmark Exams, 2011-14

	2011-12	2012-13	2013-14	Overall
<b>Math Benchmark</b>				
St. Dev. Growth	0.0199	0.0407 ***	0.0053	0.0214 ***
Days of Learning	17.0	34.7 ***	4.5	18.1 ***
<b>Literacy Benchmark</b>				
St. Dev. Growth	-0.0002	0.0321 ***	-0.0143	0.0053
Days of Learning	-0.2	30.5 ***	-13.6	5.0

*Note: Overall days of learning was a weighted average, weighted by number of treated students in each year. Typical growth of comparison group was about 0.21 standard deviations per year in math and 0.19 standard deviations per year in literacy.*

Tables 15 and 16 show the enrollment in all the charter schools included in the Geometry and 11<sup>th</sup> Grade Literacy EOC analyses, respectively. Geometry EOC matches were relatively difficult to obtain. Each charter student had to be matched with a student in a feeder district that took geometry in the same grade level, but the grade in which students take the test varies widely. In the current analysis, students took the geometry EOC anywhere between 8<sup>th</sup> and 11<sup>th</sup> grade, so sometimes finding an appropriate match was difficult. On average, about 52% of the students who were in the included grades for any particular school (up to and including all students 8<sup>th</sup> – 11<sup>th</sup> grade) had a sufficient match in a feeder school. 11<sup>th</sup> Grade Literacy matches were relatively easier to match with about 73% of 11<sup>th</sup> graders in the charter schools having reasonable matches in a feeder school.

**Table 15.** Academic Effect of All Charter Schools in **Geometry EOC**, 2011-14

<b>Math EOC (Geometry)</b>						
Year	Enrollment in Included Schools	Enrollment in Incl. Schools and Grades	% Enrollment in Included Schools and Grades	Sample Size (Charter Only)	Treatment Coefficient	Sig. Level
2011-12	6,914	2,102	23%	483	-0.1920	***
2012-13	8,583	2,625	17%	453	-0.0735	**
2013-14	7,063	2,315	31%	708	-0.0356	***
<b>Combined</b>	<b>22,560</b>	<b>7,042</b>	<b>23%</b>	<b>1,644</b>	<b>-0.0941</b>	<b>***</b>

*\*p<0.10, \*\*p<0.05, \*\*\*p<0.01*

**Table 16.** Academic Effect of All Charter Schools in **Literacy EOC**, 2011-14

<b>Literacy EOC (11th Grade)</b>						
Year	Enrollment in Included Schools	Enrollment in Incl. Schools and Grades	% Enrollment in Included Schools and Grades	Sample Size (Charter Only)	Treatment Coefficient	Sig. Level
2011-12	6,226	767	60%	459	-0.0292	
2012-13	7,888	778	73%	566	0.0588	*
2013-14	8,492	1,036	84%	866	-0.0205	
<b>Combined</b>	<b>22,606</b>	<b>2,581</b>	<b>73%</b>	<b>1,891</b>	<b>0.0002</b>	

*\*p<0.10, \*\*p<0.05, \*\*\*p<0.01*

The average annual effect in Table 16 indicates that, averaged over all schools and all school years, there was no effect on 11<sup>th</sup> Grade Literacy scores. There was, however, a slight negative effect on Geometry EOC scores across all school years and schools (see Table 15). This treatment coefficient of -0.0941 indicates a 9% of a standardized unit decrease in student test scores, holding all other covariates in the regression model constant.<sup>29</sup>

**Subgroup Analyses**

In addition to the overall results for all charter schools, combined, additional analyses were conducted to compare open-enrollment and district conversion charter schools, as well as various types of open-enrollment charter schools. These comparisons of open-enrollment charter schools by subgroup include maturity of school, defined as 5 years or older as of the 2011-12, waitlist status, location (Little Rock metro v. other), and percent of FRL-eligible students (relative to the state average).

*Open-enrollment v. District Conversion:*

The first subgroup analysis compares open-enrollment and district conversion charter schools. Open-enrollment charters, which are schools operated outside of traditional public school (TPS) districts may function differently than district conversion charters that remain more similar to a TPS in many ways.

Table 17 shows the effects on Benchmark Math scores for each type of charter school. The average annual effect of open-enrollment charters on Benchmark Math scores was slightly positive (about 0.03 standardized units), but the average annual effect of district conversion charters was null. By year, there were significant and positive effects (at the 95% confidence level) exhibited by open-enrollment charter schools in 2012-13 and district conversion charter schools in 2013-14. All other effects were either null or marginally significant.

**Table 17.** Academic Effect of Charter Schools by Type in **Benchmark Math**, 2011-14

Type of School	2011-12		2012-13		2013-14		3 Yr- Average
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size
Open-Enrollment	4,584	0.011	5,644	0.086 ***	6,986	-0.016	0.025 ***
District-Conversion	2,740	0.033 *	2,866	-0.038 *	2,824	0.054 ***	0.017
<b>All</b>	<b>7,324</b>	<b>0.020</b>	<b>8,510</b>	<b>0.041 ***</b>	<b>9,810</b>	<b>0.005</b>	<b>0.021 ***</b>

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Table 18 presents the results in Benchmark Literacy. Here, the average annual effect of open-enrollment charters was slightly positive (about 0.02 standardized units). The average annual effect of district conversion charters was slightly negative (about -0.03 standardized units). The positive open-

<sup>29</sup> Days of learning impacts were not estimable for Geometry and 11<sup>th</sup> Grade Literacy, due to the inability to estimate a typical year’s growth on the same test. Using Algebra scores as a baseline for Geometry, and 8<sup>th</sup> grade Literacy scores as a baseline for 11<sup>th</sup> Grade Literacy would make such a comparison misleading. For a snapshot of school-by-school results for all tests, meta-analytically averaged over all three years, see Appendix G.

enrollment effect was driven primarily by the 2011-12 and 2012-13 results. There was actually a slight negative open-enrollment effect in 2013-14, but the annual effect over the three years remained positive and statistically significant. The negative district conversion effect was largely driven by the negative effects in 2011-12.

**Table 18.** Academic Effect of Charter Schools by Type in **Benchmark Literacy**, 2011-14

Type of School	2011-12		2012-13		2013-14		3 Yr- Average
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size
Open-Enrollment	4,430	0.049 ***	5,550	0.070 ***	6,712	-0.029 **	0.024 ***
District-Conversion	2,702	-0.080 ***	2,620	-0.036	2,454	0.029	-0.027 **
<b>All</b>	<b>7,132</b>	<b>0.000</b>	<b>8,170</b>	<b>0.032</b> ***	<b>9,166</b>	<b>-0.014</b>	<b>0.005</b>

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Next, the charter effects on EOC performance by school type are presented in Tables 19 and 20. Table 19 presents the Geometry results. The average annual effect on Geometry EOC scores of both types of charter schools was negative. Open-enrollment charter schools had a negative effect of -0.08 standardized units and district conversion charter schools had a negative effect of -0.12 standardized units. The negative effect in open-enrollment charter schools was primarily driven by negative effects in 2011-12. The negative effect in district conversion charter schools was primarily driven by negative effects in 2011-12 and 2013-14.

**Table 19.** Academic Effect of Charter Schools by Type in **Geometry**, 2011-14

Type of School	2011-12		2012-13		2013-14		3 Yr- Average
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size
Open-Enrollment	666	-0.175 ***	624	-0.056	520	0.051	-0.078 ***
District Conversion	300	-0.225 ***	282	-0.097 *	896	-0.085 **	-0.117 ***
<b>All</b>	<b>966</b>	<b>-0.192</b> ***	<b>906</b>	<b>-0.074</b> **	<b>1,416</b>	<b>-0.036</b>	<b>-0.094</b> ***

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Table 20 presents the results for 11<sup>th</sup> Grade Literacy by charter school type. The average annual effect of open-enrollment charter schools on 11<sup>th</sup> Grade Literacy was positive (0.12 standardized units), and the average annual effect of district conversion charter schools was negative (-0.09). The positive effect in open-enrollment charter schools was primarily driven by positive effects in 2011-12 and 2012-13. The negative effect in district conversion charter schools was primarily driven by a large negative effect in 2011-12 and a smaller negative effect in 2013-14.

**Table 20.** Academic Effect of Charter Schools by Type in 11<sup>th</sup> Grade Literacy, 2011-14

Type of School	2011-12		2012-13		2013-14		3 Yr- Average
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size
Open-Enrollment	488	0.146 ***	576	0.162 ***	646	0.056	0.120 ***
District Conversion	430	-0.241 ***	556	-0.033	1,086	-0.056 *	-0.088 ***
<b>All</b>	<b>918</b>	<b>-0.029</b>	<b>1,132</b>	<b>0.059 *</b>	<b>1,732</b>	<b>-0.021</b>	<b>0.000</b>

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Before turning to the rest of the subgroups, the results for open-enrollment and district conversion charter school will be summarized separately. For all subjects except Geometry, open-enrollment charter schools had positive effects. Geometry was the only subject for which open-enrollment charter schools had a negative average annual effect; however, it should be noted that the Geometry test was generally harder to match. Additionally, this negative effect is largely driven by only a few schools.

District conversion charter schools had negative effects on all tests except for the Math Benchmark. For Math Benchmarks, the district conversion charter schools had a null effect. The negative effects of conversion charters appear to be driven by a handful of schools. One district conversion charter, for example, had a negative effect of -0.39 standardized units in Geometry (and overall), but this school was new in 2013-14 and has relatively little data available. There were also large negative overall effects in three other district conversion charters.

The rest of the subgroup comparisons focus on open-enrollment schools only.

*By Year of Opening (5 years or older as of 2011-12):*

Open-enrollment schools are grouped roughly in half, based on age. Mature charter schools are defined as schools that were five years of age or older during the 2011-12 school year. Splitting the sample in this way may help identify whether schools tend to get better with time, as past studies have indicated (Mills, 2013).

Tables 21 and 22 show the Benchmark results, and Tables 23 and 24 show the EOC results for this subgroup analysis.

Beginning with the Math Benchmark results in Table 21, the average annual effect for less mature schools was positive (0.06 standardized units), but the average annual effect for more mature schools was null. The positive effects for less mature schools were largely driven by the 2012-13 effects. Additionally, the more mature schools had a significantly negative effect in 2013-14, but combined with the other years, this averages out to a null effect.

**Table 21.** Academic Effects by Year of Opening in **Math Benchmarks** (*Open-enrollment Charters*)

Years in Operation	2011-12		2012-13		2013-14		3 Yr- Average	
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size	
Less Mature	2,352	0.021	2,934	0.125 ***	3,724	0.027	0.058 ***	
More Mature	2,232	0.000	2,710	0.041 *	3,262	-0.070 ***	-0.015	
<b>Total</b>	<b>4,584</b>	<b>0.011</b>	<b>5,644</b>	<b>0.086 ***</b>	<b>6,986</b>	<b>-0.016</b>	<b>0.025 ***</b>	

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Less mature schools were defined as 4 years or younger as of 2011-12. More mature schools were defined as 5 years or older as of 2011-12.

For the Literacy Benchmark results (Table 22), the average annual effect for less mature schools was positive (0.05 standardized units), but the average annual effect for more mature schools was null. The positive effects for less mature schools were driven primarily by significant positive effects in 2011-12 and 2012-13. The year-by-year results for more mature schools indicate that there were positive effects in Literacy in 2011-12 and 2012-13, but negative effects in 2013-14. These average out to a null average annual effect for more mature schools in Literacy.

**Table 22.** Academic Effects by Year of Opening in **Literacy Benchmarks** (*Open-enrollment Charters*)

Years in Operation	2011-12		2012-13		2013-14		3 Yr- Average	
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Avg. Annual Effect Size	
Less Mature	2,290	0.050 **	2,894	0.077 ***	3,546	0.016	0.045 ***	
More Mature	2,140	0.049 **	2,656	0.063 ***	3,166	-0.075 ***	0.003	
<b>Total</b>	<b>4,430</b>	<b>0.049 ***</b>	<b>5,550</b>	<b>0.070 ***</b>	<b>6,712</b>	<b>-0.029 **</b>	<b>0.024 ***</b>	

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Less mature schools were defined as 4 years or younger as of 2011-12. More mature schools were defined as 5 years or older as of 2011-12.

For the Geometry results (Table 23), the average annual effect for less mature schools was negative (-0.10 standardized units), but the average annual effect for more mature schools was null. The negative effects for less mature schools were largely driven by the 2011-12 effects as well as a marginally significant and negative effect in 2012-13. These were somewhat offset by a marginally significant but positive Geometry effect in 2013-14. Turning to the more mature schools, which had an overall null effect, there is a statistically significant negative effect in 2011-12 (-0.17 standardized units) but null effects in 2012-13 and 2013-14.

**Table 23.** Academic Effects by Year of Opening in **Geometry** (*Open-enrollment Charters*)

Years in Operation	2011-12		2012-13		2013-14		3 Yr- Average	
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size	
Less Mature	308	-0.185 ***	226	-0.121 *	144	0.162 *	-0.096 ***	
More Mature	358	-0.165 ***	398	-0.012	376	0.022	-0.006	
<b>Total</b>	<b>666</b>	<b>-0.175 ***</b>	<b>624</b>	<b>-0.056</b>	<b>520</b>	<b>0.051</b>	<b>-0.078 ***</b>	

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Less mature schools were defined as 4 years or younger as of 2011-12. More mature schools were defined as 5 years or older as of 2011-12.

The 11<sup>th</sup> Grade Literacy results in Table 24 indicate a null average annual effect for less mature schools. The more mature schools, however, had a positive effect on 11<sup>th</sup> Grade Literacy (0.16 standardized units). The null average annual effect for less mature schools was driven by null effects in all three years. For the more mature schools, the positive average annual effect was driven primarily by positive effects in 2011-12 and 2012-13.

**Table 24.** Academic Effects by Year of Opening in **11<sup>th</sup> Grade Literacy** (*Open-enrollment Charters*)

Years in Operation	2011-12		2012-13		2013-14		3 Yr- Average	
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size	
Less Mature	194	0.097	212	0.102	260	-0.022	0.058	
More Mature	294	0.183 ***	364	0.201 ***	386	0.098	0.158 ***	
<b>Total</b>	<b>488</b>	<b>0.146 ***</b>	<b>576</b>	<b>0.162 ***</b>	<b>646</b>	<b>0.056</b>	<b>0.120 ***</b>	

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Less mature schools were defined as 4 years or younger as of 2011-12. More mature schools were defined as 5 years or older as of 2011-12.

While previous research has shown that open-enrollment charter schools mature over time,<sup>30</sup> these tables show mixed results for Arkansas charter schools. One possibility for the lack of a clear pattern is that different groups of new schools open each year. The results for a small subgroup of schools that opened during a specific period can be highly influenced by an outlier school that performs better or worse than would be expected from a school of that age.

*By Waitlist Status:*<sup>31</sup>

Another subgroup of schools that would be expected to perform differently are those schools with waitlists – parents and their students who have informed the school that they would like to receive admission if seats open in their grades. A waitlist, in this analysis, will serve as a proxy for excessive demand for an open-enrollment charter school. This list is usually formed after a school conducts a lottery

<sup>30</sup> Hoxby, Caroline Minter, and Jonah E. Rockoff. *The Impact of Charter Schools on Student Achievement*. Department of Economics, Harvard University, 2004. <<http://fugu.ccpr.ucla.edu/events/ccpr-previous-seminars/ccpr-seminars-previous-years/Sem05W%20Hoxby%20Impact%20of%20Charter%20Schools.pdf>>.

<sup>31</sup> Schools notified the Arkansas Department of Education if they had a waitlist, but there was no verification of whether the others actually had a lottery, so they are listed as “unreported.”

admission process. Only schools that reported their waitlists will be included in the analysis as having a waitlist. It is possible that some schools have waitlists but did not report them, in which case they will be classified as “no waitlist reported.” It is also possible that a school used a lottery admission process but, upon enrolling students, had no waitlist because various parents who received admissions chose not to take advantage of the seats. An explanation of the classification for the waitlist analysis is found in Appendix H of this report.

Tables 25 and 26 represent the Benchmark results for schools with waitlists and schools without a reported waitlist.

For the Math Benchmark results (Table 25), the average annual effect for schools with a waitlist was positive (0.04 standardized units), but the average annual effect for schools without a reported waitlist was null. The positive effects for waitlist schools were driven primarily by positive 2012-13 effects. The null average annual effect of the schools without waitlists was driven by a positive effect in 2012-13 offset by a negative effect in 2013-14.

**Table 25.** Academic Effects by Waitlist in **Math Benchmarks** (*Open-enrollment Charters*)

Waitlist Status	2011-12		2012-13		2013-14		3 Yr- Average
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size
Waitlist	2,750	0.004	3,620	0.090 ***	5,054	0.020	0.038 ***
No Waitlist Reported	1,834	0.021	2,024	0.064 ***	1,932	-0.109 ***	-0.006
<b>Total</b>	<b>4,584</b>	<b>0.011</b>	<b>5,644</b>	<b>0.086 ***</b>	<b>6,986</b>	<b>-0.016</b>	<b>0.025 ***</b>

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

For the Literacy Benchmark results (Table 26), the average annual effect for schools with a waitlist was positive (0.03 standardized units), but the average annual effect for schools without a reported waitlist was null. The positive effects for waitlist schools were driven by positive effects in 2011-12 and 2012-13. The null average annual effect of the schools without waitlists was driven by a positive effect in 2012-13 offset by a negative effect in 2013-14.

**Table 26.** Academic Effects by Waitlist in **Literacy Benchmarks** (*Open-enrollment Charters*)

Waitlist Status	2011-12		2012-13		2013-14		3 Yr- Average
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size
Waitlist	2,696	0.072 ***	3,570	0.059 ***	4,830	-0.006	0.032 ***
No Waitlist Reported	1,734	0.013	1,980	0.092 ***	1,882	-0.092 ***	0.009
<b>Total</b>	<b>4,430</b>	<b>0.049 ***</b>	<b>5,550</b>	<b>0.070 ***</b>	<b>6,712</b>	<b>-0.029 **</b>	<b>0.024 ***</b>

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Turning to the EOC results, Tables 27 and 28 show separately the results for schools with waitlists and schools without reported waitlists.

For the Geometry EOC results (Table 27), there was a null average annual effect for schools with waitlists, but schools with no waitlist reported had an average annual effect of -0.15 standardized units. For the schools with waitlists, there was a statistically significant negative effect in 2011-12 (-0.14

standardized units), but there were null effects in 2012-13 and 2013-14 as well. For the schools with no reported waitlists, the negative average annual effect was driven primarily by a negative effect (-0.23 standardized units) in 2011-12.

**Table 27.** Academic Effects by Waitlist in **Geometry** (*Open-enrollment Charters*)

Waitlist Status	2011-12		2012-13		2013-14		3 Yr- Average
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size
Waitlist	458	-0.143 ***	340	-0.031	520	0.051	-0.044
No Waitlist Reported	208	-0.232 ***	284	-0.092	N/A	N/A	-0.154 ***
<b>Total</b>	<b>666</b>	<b>-0.175 ***</b>	<b>624</b>	<b>-0.056</b>	<b>520</b>	<b>0.051</b>	<b>-0.078 ***</b>

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

In 11<sup>th</sup> Grade Literacy (Table 28), the schools with waitlists had a positive average annual effect (0.12 standardized units), as did schools without reported waitlists (0.14 standardized units). For the schools with waitlists, the overall positive effect was driven primarily by positive effects in 2011-12 and 2012-13. For the schools with no reported waitlists, the positive average annual effect was driven primarily by a large (but only marginally significant effect) in 2012-13 as well as a sizable (0.12 standardized units) but statistically insignificant positive effect in 2011-12.

**Table 28.** Academic Effects by Waitlist in **11<sup>th</sup> Grade Literacy** (*Open-enrollment Charters*)

Waitlist Status	2011-12		2012-13		2013-14		3 Yr- Average
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size
Waitlist	346	0.151 ***	380	0.167 ***	646	0.056	0.115 ***
No Waitlist Reported	142	0.116	196	0.154 *	N/A	N/A	0.138 **
<b>Total</b>	<b>488</b>	<b>0.146 ***</b>	<b>576</b>	<b>0.162 ***</b>	<b>646</b>	<b>0.056</b>	<b>0.120 ***</b>

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

By Location (*Little Rock Metro v. Other*):<sup>32</sup>

Further, effects on test scores may differ by the location of the school, which can also be related to how much overall competition is in the area. For this reason, results are separated for the open-enrollment schools in the Little Rock Metropolitan area (including nearby towns that are within 30 miles of Little Rock). See Appendix I for a list of Charter Schools by location.

For the Math Benchmark results (Table 29), the average annual effect of open-enrollment charter schools in the Little Rock Metro area was positive (0.05 standardized units). There was a null effect of open-enrollment schools outside this area. The positive overall effect for schools in the Little Rock area was driven by positive effects in 2012-13 and 2013-14. The null average annual effect of the non-Little Rock Metro schools was driven by a positive effect in 2012-13 offset by a negative effect in 2013-14.

<sup>32</sup> Little Rock Metro charter schools include those serving the Little Rock, N. Little Rock, Jacksonville, and Maumelle areas.

**Table 29.** Academic Effects by Location in **Math Benchmarks** (*Open-enrollment Charters*)

School Location	2011-12		2012-13		2013-14		3 Yr- Average	
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size	
Little Rock Metro	3,208	0.011	3,774	0.086 ***	4,028	0.039 **	0.047 ***	
Other	1,376	0.000	1,870	0.082 ***	2,958	-0.089 ***	0.000	
<b>Total</b>	<b>4,584</b>	<b>0.011</b>	<b>5,644</b>	<b>0.086 ***</b>	<b>6,986</b>	<b>-0.016</b>	<b>0.025 ***</b>	

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Little Rock Metro Includes Schools in Little Rock, North Little Rock, Jacksonville, and Maumelle.

Turning to the Literacy Benchmark results by location (Table 30), the average annual effect of open-enrollment charter schools in the Little Rock Metro area was positive (0.04 standardized units). There was a null effect of open-enrollment schools outside this area. The positive overall effect for schools in the Little Rock area was driven by positive effects in 2011-12 and 2012-13. The null average annual effect of the non-Little Rock Metro schools was driven by a positive effect in 2012-13 offset by a negative effect in 2013-14.

**Table 30.** Academic Effects by Location in **Literacy Benchmarks** (*Open-enrollment Charters*)

School Location	2011-12		2012-13		2013-14		3 Yr- Average	
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size	
Little Rock Metro	3,186	0.072 ***	3,734	0.057 ***	3,916	0.006	0.043 ***	
Other	1,244	-0.009	1,816	0.097 ***	2,796	-0.081 ***	-0.014	
<b>Total</b>	<b>4,430</b>	<b>0.049 ***</b>	<b>5,550</b>	<b>0.070 ***</b>	<b>6,712</b>	<b>-0.029 **</b>	<b>0.024 ***</b>	

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Little Rock Metro Includes Schools in Little Rock, North Little Rock, Jacksonville, and Maumelle.

Tables 31 and 32 show the corresponding EOC results by location.

In Geometry (Table 31), the average annual effect of the Little Rock Metro schools was negative (-0.10 standardized units), and there was a null effect of schools outside the Little Rock Metro area. The negative overall effect for Little Rock Metro schools was driven primarily by a 0.18 standardized unit negative effect in 2011-12 and a smaller negative effect in 2012-13. For the schools outside this area, there was a null effect overall despite a statistically significant and negative effect in 2011-12. This is largely due to an offsetting large (but not statistically significant) positive effect in 2013-14.

**Table 31.** Academic Effects by Location in **Geometry** (*Open-enrollment Charters*)

School Location	2011-12		2012-13		2013-14		3 Yr- Average
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size
Little Rock Metro	458	-0.178 ***	394	-0.088 *	304	0.020	-0.098 ***
Other	208	-0.181 ***	230	-0.014	216	0.131	-0.042
<b>Total</b>	<b>666</b>	<b>-0.175 ***</b>	<b>624</b>	<b>-0.056</b>	<b>520</b>	<b>0.051</b>	<b>-0.078 ***</b>

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Little Rock Metro Includes Schools in Little Rock, North Little Rock, Jacksonville, and Maumelle.

In 11<sup>th</sup> Grade Literacy (Table 32), the average annual effect of the Little Rock Metro schools was null, but there was a positive average annual effect of schools outside the Little Rock Metro area (0.22 standardized units). For the open-enrollment charter schools within the Little Rock Metro area, there was a null effect overall despite a statistically significant and positive effect in 2012-13. The positive overall effect for schools outside of this area was driven by positive effects (0.19 – 0.23 standardized units) in each of the three years.

**Table 32.** Academic Effects by Location in **11<sup>th</sup> Grade Literacy** (*Open-enrollment Charters*)

School Location	2011-12		2012-13		2013-14		3 Yr- Average
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size
Little Rock Metro	306	0.092	342	0.143 **	390	-0.062	0.052
Other	182	0.225 **	234	0.190 **	256	0.232 ***	0.215 ***
<b>Total</b>	<b>488</b>	<b>0.146 ***</b>	<b>576</b>	<b>0.162 ***</b>	<b>646</b>	<b>0.056</b>	<b>0.120 ***</b>

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Little Rock Metro Includes Schools in Little Rock, North Little Rock, Jacksonville, and Maumelle.

*By Level of Poverty of Student Population Served (Relative to the State Average):*

The last subgroup comparison included here shows separate results for the charter schools serving relatively poor ( $\geq$  State Average of about 61% FRL) and relatively well off ( $<$  State Average of about 61% FRL) student populations. These groups were based on the charter school’s overall enrollment, not necessarily the students that were actually matched. This subgroup is particularly relevant considering that open-enrollment charter schools are designed as a method of public (free) choice for students who may not be able to afford private schools or other options.<sup>33</sup>

For the Math Benchmark results (Table 33), the average annual effect of the schools serving lower income students ( $\geq$  State Average of about 61% FRL) was positive (0.04 standardized units). The schools serving less low income students ( $<$  State Average of about 61% FRL) had a marginally significant and small positive effect (0.02 standardized units). The positive overall effect for schools serving more low income students was driven primarily by a 0.15 standardized unit positive effect in

<sup>33</sup> See <http://www.arkansased.gov/faqs/106/why-do-parents-choose-charter-schools>

2012-13. Looking at schools serving less low income students, there was a statistically significant positive effect in 2012-13 (0.05 standardized units), but null effects in both 2011-12 and 2013-14.

**Table 33.** Academic Effects by Level of Poverty of Student Population Served, **Math Benchmarks** (Open-enrollment Charters)

Population Served	2011-12		2012-13		2013-14		3 Yr- Average
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size
Low-Income	1,598	-0.033	2,042	0.152 ***	2,356	-0.020	0.036 ***
High-Income	2,986	0.027	3,602	0.046 **	4,630	-0.012	0.018 *
<b>Total</b>	<b>4,584</b>	<b>0.011</b>	<b>5,644</b>	<b>0.086 ***</b>	<b>6,986</b>	<b>-0.016</b>	<b>0.025 ***</b>

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Groups represent charter schools serving relatively high-income (FRL < 50%) or relatively low-income (FRL > 50%) student populations.

For the Literacy Benchmark results (Table 34), the average annual effect of the schools serving lower income students ( $\geq$  State Average of about 61% FRL) was positive (0.07 standardized units). The schools serving less low income students (< State Average of about 61% FRL) had a null average annual effect. The positive overall effect for schools serving more low income students was driven primarily by a 0.13 standardized unit positive effect in 2012-13 and a smaller positive effect in 2013-14. The null average annual effect of the schools serving less low income students was driven by a positive effect in 2011-12 offset by a negative effect in 2013-14.

**Table 34.** Academic Effects by Level of Poverty of Student Population Served, **Literacy Benchmarks** (Open-enrollment Charters)

Population Served	2011-12		2012-13		2013-14		3 Yr- Average
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size
Low-Income	1,486	0.004	1,986	0.131 ***	2,208	0.056 **	0.070 ***
High-Income	2,944	0.071 ***	3,564	0.035 *	4,504	-0.075 ***	0.002
<b>Total</b>	<b>4,430</b>	<b>0.049 ***</b>	<b>5,550</b>	<b>0.070 ***</b>	<b>6,712</b>	<b>-0.029 **</b>	<b>0.024 ***</b>

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Groups represent charter schools serving relatively high-income (FRL < 50%) or relatively low-income (FRL > 50%) student populations.

In Geometry, the average annual effect of the schools serving lower income students ( $\geq$  State Average of about 61% FRL) was null. The schools serving less low income students (< State Average of about 61% FRL) had a negative average annual effect (-0.11 standardized units). The effect of the lower income schools was consistently null across all three years. For the schools serving less low income students, the overall negative average annual effect was driven primarily by a large (-0.20 standardized unit) negative effect in 2011-12.

**Table 35.** Academic Effects by Level of Poverty of Student Population Served, **Geometry** (*Open-enrollment Charters*)

Population Served	2011-12		2012-13		2013-14		3 Yr- Average
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size
Low-Income	60	0.023	138	-0.049	142	0.134	0.032
High-Income	606	-0.204 ***	486	-0.062	378	0.016	-0.109 ***
<b>Total</b>	<b>666</b>	<b>-0.175 ***</b>	<b>624</b>	<b>-0.056</b>	<b>520</b>	<b>0.051</b>	<b>-0.078 ***</b>

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Groups represent charter schools serving relatively high-income (FRL < 50%) or relatively low-income (FRL > 50%) student populations.

In 11<sup>th</sup> Grade Literacy, the average annual effect of the schools serving more low income students ( $\geq$  State Average of about 61% FRL) was positive (0.23 standardized units), as was the effect of the schools serving less low income students (0.11 standardized units). The positive average annual effect of the lower income schools was driven primarily by a large (0.63 standardized units) positive effect in 2011-12. For the schools serving less low income students, the overall positive average annual effect was driven primarily by positive effects in both 2011-12 and 2012-13.

**Table 36.** Academic Effects by Level of Poverty of Student Population Served, **11<sup>th</sup> Grade Literacy** (*Open-enrollment Charters*)

Population Served	2011-12		2012-13		2013-14		3 Yr- Average
	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Sample Size (T + C)	Effect Size	Annual Effect Size
Low-Income	40	0.630 ***	86	0.154	52	0.083	0.228 ***
High-Income	448	0.106 **	490	0.167 ***	594	0.053	0.106 ***
<b>Total</b>	<b>488</b>	<b>0.146 ***</b>	<b>576</b>	<b>0.162 ***</b>	<b>646</b>	<b>0.056</b>	<b>0.120 ***</b>

Note: \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Groups represent charter schools serving relatively high-income (FRL < 50%) or relatively low-income (FRL > 50%) student populations.

Table 37 shows a comparison of each subgroup’s average annual effects by type of test and overall. In general, the positive effects of open-enrollment charter schools tend to be driven by the newer schools, schools with waitlists, schools in the Little Rock Metro area, and schools serving less well-off students ( $\geq$  State Average of about 61% FRL).

**Table 37:** Summary of Subgroup Effects, 2011-14

School	Academic Impacts of Public Charter Schools (Average 1-Yr Impacts)				
	Overall	Benchmark Math	Benchmark Literacy	Geometry	11th Grade Literacy
<b>All Charter Schools</b>	<b>0.008 *</b>	<b>0.021 ***</b>	<b>0.005</b>	<b>-0.094 ***</b>	<b>0.000</b>
Open Enrollment	0.023 ***	0.025 ***	0.024 ***	-0.078 ***	0.120 ***
District Conversion	-0.021 ***	0.017	-0.027 **	-0.117 ***	-0.088 ***
<b>Open-Enrollment Charter Schools by Subgroup</b>					
Less Mature (Less than 5 years as of 2011-12)	0.046 ***	0.058 ***	0.045 ***	-0.096 ***	0.058
More Mature (5 years or more as of 2011-12)	0.001	-0.015	0.003	-0.006	0.158 ***
Waitlist	0.034 ***	0.038 ***	0.032 ***	-0.044	0.115 ***
No Waitlist Reported	-0.004	-0.006	0.009	-0.154 ***	0.138 **
Little Rock Metro	0.038 ***	0.047 ***	0.043 ***	-0.098 ***	0.052
Non- Little Rock Metro	0.000	0.000	-0.014	-0.042	0.215 ***
Schools Serving ≥ 61% FRL Students (State Average)	0.054 ***	0.036 ***	0.070 ***	0.032	0.228 ***
Schools Serving < 61% FRL Students (State Average)	0.007	0.018 *	0.002	-0.109 ***	0.106 ***

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

## Conclusion

This evaluation sought to offer an exhaustive overview of the academic effects of Arkansas charter schools for the 2011-12 to 2013-14 school years. Using a “matched twin” method, charter students in each school were matched with similar students in their feeder districts in each of these years. Separate matches and analyses were conducted for each of four subject tests: Math and Literacy Benchmarks (outcomes in grades 4-8) and the Geometry and 11<sup>th</sup> Grade Literacy EOCs.

Given the data available, this quasi-experimental model is the best form of analysis. Further, this report is particularly important because it focuses on three years’ worth of effects, which is much better than only looking at a single school year. Similarly, by covering four different subject tests (two each at the elementary and secondary levels) a thorough analysis of the academic effects of Arkansas charter schools was conducted.

Comparisons of the important features of the charter student and “matched twin” groups suggest that the matching strategy succeeded in producing similar groups for analysis. Statistically significant differences in several student characteristics were evident; however, those differences occurred at about the rate expected by mere chance. The use of linear regression to control for the influence of these characteristics produced estimates of the differential effects of charter schooling on student test scores, compared with similar looking peers in the feeder traditional public schools.

Overall, charter schools (including open-enrollment and conversion schools) across the state had a statistically significant and positive effect in Math Benchmark test scores, while the Literacy

Benchmark effect was not statistically significant when combining all three years. The positive effect on Math Benchmark scores was largely driven by a significant effect in 2012-13, while the 2011-12 and 2013-14 Math effects were insignificant. There was a positive charter effect in Literacy Benchmarks in 2012-13 but, when combined with the other two years, the effect was null overall.

In terms of EOC results, combined over all schools and all three school-years, there were statistically significant and negative effects on Geometry EOC test scores and a null effect on Literacy EOC scores. Although the Geometry EOC results were negative in all three years, the percent of students in the included grades and schools that had adequate matches was low (52% in total), so the Geometry EOC effects may not be representative of the total effect charter schools have on secondary students in Math.

In general, the positive effects of open-enrollment charter schools in both Benchmark exams (Math and Literacy) are driven primarily by the newer schools, schools with waitlists, schools in the Little Rock Metro area, and schools serving less well-off students ( $\geq$  State Average of about 61% FRL). Therefore, it appears that these types of schools are more likely to positively effect the achievement of elementary students, regardless of subject.

In contrast, the negative effects of open-enrollment charter schools in Geometry and the null effects of 11<sup>th</sup> Grade Literacy tell less of a consistent story. There are overall negative effects for both EOC tests in district conversion schools, but open-enrollment schools, had negative effects on Geometry and positive effects on 11<sup>th</sup> Grade Literacy. When assessing the Geometry and 11<sup>th</sup> Grade Literacy results at the same time, it appears that more mature schools tend to appear to do better than less mature schools, schools with waitlists tend to perform better than those without, schools outside the Little Rock Metro area tend to perform better than those within, and schools serving more low income students tend to perform better than those serving less low income students.

Reasonable conclusions that can be drawn from this study are that the public charter schools in Arkansas have their clearest positive effect on student test scores in the grades prior to high school and in Math in particular. Arkansas charters have their clearest negative effect on student test scores in the high school grades and specifically in Geometry. The school year 2012-13 appeared to be the strongest individual year for charter school performance, compared with 2011-12 and 2013-14. The strong positive results in 2012-13 are primarily driven by particular open-enrollment schools with positive effects on the Math and Literacy Benchmarks as well as the 11<sup>th</sup> Grade Literacy Exam (see Appendix G). Two of these schools were not included in the 2011-12 analysis due to a very small sample size, so this could explain some of the jump in positive effects in 2012-13.

The results of this evaluation tell a somewhat different story than the previous evaluations of Arkansas public charter schools discussed in the Literature Review. The “matched twin” methodology is similar to the one used in the CREDO studies of Arkansas charters (2009; 2013) and falls within the same general class of rigorous quasi-experimental methods as the Mills (2014) study. While Mills (2014) found improvement in charters over time, the current analysis of less mature and more mature schools indicate the opposite. This difference could be driven primarily by a large positive effect of one charter that is relatively young but part of a successful charter network. In the end, the current study may have

somewhat different results because this evaluation covers a different time period than previous studies covered.

With the evaluation that has been performed, there were certain limitations that can be improved upon in future studies. First, the "gold standard" experimental design strategy could not be used because of the limited number of charter school seats that were allocated using via randomized and because of the types of data collected about admissions lotteries. A quasi-experimental study design was implemented instead. A second limitation of this study was the relatively low student match rates, especially in certain subjects such as the Geometry EOC. Several of the charter schools, by design or for other reasons, maintain low student populations and therefore have low numbers of students tested.

Researchers should continue to analyze the academic effects of Arkansas public charter schools. One of the most celebrated aspects of charter schools anywhere is that they are held accountable for their outcomes. This evaluation seeks to add to that process. While academic effects do not encompass the entire mission of a charter school, or any school, these results can help to inform the public regarding charter school performance along with evaluations of other aspects of the mission of Arkansas public charter schools.

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**Appendix A: Demographics of Arkansas Charter Schools**

**Table A1.** Demographics of Arkansas Charter Schools (3-Year Average, 2011-14)

<b>Charter School</b>	<b>District</b>	<b>Enrollment</b>	<b>FRL %</b>	<b>Minority %</b>
Academics Plus	-	640	27%	26%
Arkansas Virtual Academy	-	778	0%	18%
Badger Academy	Beebe	27	74%	20%
Bauxite Miner Academy	Bauxite	41	39%	7%
Arkansas Arts Academy	-	779	33%	20%
Blytheville Charter School and Alternative	Blytheville	90	91%	95%
Blytheville High School - New Tech	Blytheville	783	74%	85%
Cabot Academic Center for Excellence	Cabot	192	50%	8%
Cloverdale Aerospace Technology	Little Rock	669	94%	97%
Covenant Keepers	-	218	86%	99%
Cross County New Tech High School	Cross Co.	305	73%	14%
Dreamland Academy	-	138	96%	99%
Eastside New Vision	Warren	524	77%	58%
eSTEM (All)	-	1,468	33%	59%
Haas Hall Academy	-	318	0%	14%
Imboden Area Charter School	-	49	81%	2%
Jacksonville Lighthouse	-	711	61%	63%
KIPP Blytheville	-	208	80%	89%
KIPP Helena/W. Helena	-	858	86%	65%
Lincoln Academic Center of Excellence	Lincoln	120	56%	22%
Lincoln Middle Academy of Excellence	Forrest	461	88%	86%
Lincoln New Tech High School	Lincoln	515	68%	17%
LISA Academy	-	730	36%	72%
LISA Academy North Little Rock	-	514	35%	51%
Little Rock Preparatory Academy	-	180	78%	99%
Mountain Home High School Career Academy	Mtn. Home	1,202	47%	8%
Northwest Arkansas Classical Academy	-	400	20%	32%
Oak Grove Health, Wellness, and	Paragould	437	67%	9%
Osceola STEM Charter	Osceola	375	90%	82%
Pine Bluff Lighthouse Academy	-	230	87%	98%
Premier High School of Little Rock	-	90	70%	30%
Quest Middle School of Pine Bluff	-	92	89%	11%
Ridgeroad Middle School	N. Little	417	91%	90%
Rogers New Tech High School	Rogers	291	55%	37%
SIA Tech	-	128	48%	87%
The Academies at Jonesboro High School	Jonesboro	1068	62%	51%
Vilonia Academy of Service and Technology	Vilonia	108	35%	4%
Vilonia Academy of Technology	Vilonia	78	34%	1%
Washington Academy	Texarkana	99	69%	77%

**Appendix B: “Feeder” Traditional Public School Districts for Open-enrollment Charter Schools, 2011-14 (Based on 2011-12 data)**

**Table B1.** Traditional Public School (TPS) “Feeder” Districts for Open-enrollment Charter Schools

<b>DLEA</b>	<b>School Districts</b>	<b>Enrollment from TPS</b>	<b>Cumulative % of Charter Students from TPS</b>	<b>% of Charter Students from TPS</b>
6040700	<b>Academics Plus</b>	<b>650</b>		
6003000	Pulaski Co. Spec. S.D.	536	82%	82%
6002000	N. Little Rock S.D.	42	89%	6%
6001000	Little Rock S.D.	38	95%	6%
	<b>Sum of All Districts</b>			<b>94%</b>
6043700	<b>Arkansas Virtual Academy</b>	<b>500</b>		
6001000	Little Rock S.D.	43	9%	9%
2301000	Conway S.D.	34	15%	7%
401000	Bentonville S.D.	30	21%	6%
6003000	Pulaski Co. Spec. S.D.	22	26%	4%
4304000	Cabot S.D.	20	30%	4%
405000	Rogers S.D.	19	34%	4%
6303000	Bryant S.D.	17	37%	3%
7207000	Springdale S.D.	14	40%	3%
503000	Harrison S.D.	13	42%	3%
6601000	Fort Smith S.D.	13	45%	3%
7203000	Fayetteville S.D.	11	47%	2%
5703000	Mena S.D.	10	49%	2%
6401000	Waldron S.D.	10	51%	2%
6302000	Benton S.D.	10	53%	2%
	<b>Sum of All Districts</b>			<b>54%</b>
440700	<b>Arkansas Arts Academy</b>	<b>776</b>		
405000	Rogers S.D.	523	67%	67%
401000	Bentonville S.D.	184	91%	24%
	<b>Sum of All Districts</b>			<b>91%</b>
6044700	<b>Covenant Keepers</b>	<b>223</b>		
6001000	Little Rock S.D.	168	75%	75%
6003000	Pulaski Co. Spec. S.D.	51	98%	23%
	<b>Sum of All Districts</b>			<b>98%</b>

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<b>DLEA</b>	<b>School Districts</b>	<b>Enrollment from TPS</b>	<b>Cumulative % of Charter Students from TPS</b>	<b>% of Charter Students from TPS</b>
6045700	<b>eSTEM Elementary</b>	<b>471</b>		
6001000	Little Rock S.D.	278	59%	59%
6002000	N. Little Rock S.D.	97	80%	21%
6003000	Pulaski Co. Spec. S.D.	66	94%	14%
	<b>Sum of All Districts</b>			<b>94%</b>
6046700	<b>eSTEM Middle School</b>	<b>509</b>		
6001000	Little Rock S.D.	305	60%	60%
6003000	Pulaski Co. Spec. S.D.	97	79%	19%
6002000	N. Little Rock S.D.	80	95%	16%
	<b>Sum of All Districts</b>			<b>95%</b>
6047700	<b>eSTEM High School</b>	<b>505</b>		
6001000	Little Rock S.D.	308	61%	61%
6003000	Pulaski Co. Spec. S.D.	101	81%	20%
6002000	N. Little Rock S.D.	77	96%	15%
	<b>Sum of All Districts</b>			<b>96%</b>
7240700	<b>Haas Hall Academy</b>	<b>319</b>		
7203000	Fayetteville S.D.	133	42%	42%
7207000	Springdale S.D.	78	66%	24%
401000	Bentonville S.D.	18	72%	6%
405000	Rogers S.D.	15	76%	5%
7202000	Farmington S.D.	13	81%	4%
406000	Siloam Springs S.D.	13	85%	4%
7206000	Prairie Grove S.D.	12	88%	4%
7208000	West Fork S.D.	10	92%	3%
	<b>Sum of All Districts</b>			<b>92%</b>
3840700	<b>Imboden Area Charter School</b>	<b>40</b>		
3806000	Sloan-Hendrix S.D.	17	43%	43%
6103000	Pocahontas S.D.	14	78%	35%
3810000	Lawrence County S.D.	9	100%	22%
	<b>Sum of All Districts</b>			<b>100%</b>

ARKANSAS CHARTER SCHOOL PROGRAM EVALUATION

<b>DLEA</b>	<b>School Districts</b>	<b>Enrollment from TPS</b>	<b>Cumulative % of Charter Students from TPS</b>	<b>% of Charter Students from TPS</b>
6050700	<b>Jacksonville Lighthouse</b>	<b>695</b>		
6003000	Pulaski Co. Spec. S.D.	623	90%	90%
6002000	N. Little Rock S.D.	49	97%	7%
	<b>Sum of All Districts</b>			<b>97%</b>
5440700	<b>KIPP Delta Public Schools</b>	<b>1,167</b>		
5403000	Helena-West Helena S.D.	724	62%	62%
4702000	Blytheville S.D.*	224	81%	19%
5404000	Marvell S.D.	87	89%	7%
3904000	Lee County S.D.	57	94%	5%
	<b>Sum of All Districts</b>			<b>93%</b>
6041700	<b>LISA Academy</b>	<b>792</b>		
6001000	Little Rock S.D.	730	92%	92%
	<b>Sum of All Districts</b>			<b>92%</b>
6048700	<b>LISA Academy NLR</b>	<b>500</b>		
6003000	Pulaski Co. Spec. S.D.	286	57%	57%
6002000	N. Little Rock S.D.	157	89%	31%
6001000	Little Rock S.D.	38	96%	8%
	<b>Sum of All Districts</b>			<b>96%</b>
6049700	<b>Little Rock Prep</b>	<b>393</b>		
6001000	Little Rock S.D.	331	84%	84%
6002000	N. Little Rock S.D.	36	93%	9%
	<b>Sum of All Districts</b>			<b>93%</b>
3541700	<b>Pine Bluff Lighthouse</b>	<b>244</b>		
3505000	Pine Bluff S.D.	188	77%	77%
3509000	Watson Chapel S.D.	23	86%	9%
3502000	Dollarway S.D.	23	96%	9%
	<b>Sum of All Districts</b>			<b>95%</b>

ARKANSAS CHARTER SCHOOL PROGRAM EVALUATION

<b>DLEA</b>	<b>School Districts</b>	<b>Enrollment from TPS</b>	<b>Cumulative % of Charter Students from TPS</b>	<b>% of Charter Students from TPS</b>
6052700	<b>SIA Tech</b>	<b>124</b>		
6001000	Little Rock S.D.	33	27%	27%
6003000	Pulaski Co. Spec. S.D.	32	52%	26%
3505000	Pine Bluff S.D.	10	60%	8%
	<b>Sum of All Districts</b>			<b>61%</b>
6042701	<b>Dreamland Academy</b>	N/A <sup>#</sup>		
6001000	Little Rock S.D.			
6003000	Pulaski Co. Spec. S.D.			
3505000	Pine Bluff S.D.			

\* - Blytheville School District particularly served as the feeder district to the KIPP Blytheville school. Helena-West Helena, Marvell, and Lee County served as the feeder district to the KIPP Delta campuses in Helena-West Helena.

<sup>#</sup> - Dreamland Academy did not have available "district feeder" documents available. However, student data was able to provide the three districts students were most likely to come from.

**Appendix C: Quasi-Experimental Design for 2011-2014 Evaluation of Arkansas Public Charter Schools**

Step	Description
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**I. Build Student Level Dataset for all eligible students**

- A. Dataset includes data from 2008-09 to 2013-14 school years.
- B. Dataset includes for each student:
  - 1. Unique ID
  - 2. Grade level each year
  - 3. Standardized test scores from each year for each subject
  - 4. Free and Reduced Lunch (FRL) status
  - 5. Race/Ethnicity
  - 6. Gender

**II. District Matching Procedure**

- A. Using data provided by the ADE, charter districts are matched against districts that students would have attended had they attended their assigned traditional public school district.
  - 1. Districts that provide the most students, up to 90% of all enrolled, are used for matching.
    - i. Some districts are able to satisfy that requirement with one district (LISA Academy gets 92% of its students from the Little Rock S.D.).
  - 2. If 90% of students do not come from districts that provide 10 or more students, then a cut-off is made at 10 students.
    - i. This occurs in two districts (ARVA and SIA Tech) in 2011-12.
  - 3. Feeder Districts created based on 2011-12 data were used consistently for each year of this three year study.

**III. Matching Procedure**

**A. Benchmark Matching Process (Conducted Separately for Math and Literacy)**

- 1. Students are first matched with a student in the same grade in both the outcome year and baseline or matching year (generally the year before).
- 2. For the Math and Literacy analyses, separately, all students are matched based on previous year scores on the same subject test, rounded to the nearest 0.01 z-score unit. Note, the other subject test score is used as part of the propensity score in step 4, as having a matched test score in the same subject is more relevant for controlling for prior performance. Therefore, the Math analysis matches first on Math examination scores, and the Literacy analysis matches first on Literacy examination scores.

3. A propensity score is then created using FRL status (using all three designations: free lunch, reduced lunch, and paid lunch), race/ethnicity (African-American, Asian-American or Pacific Islander, Hispanic-American, Native American, White, or “Two or more races”), gender, and the “other” test score (Literacy for the Math analysis and Math for the Literacy analysis).
4. Finally, all matches are based on guaranteeing exact matches from step 1 and 2, and the closest available propensity score match from step 3.<sup>34</sup>

**B. Geometry EOC Matching Process**

1. Students are first matched with a student in the same grade in both the outcome year and baseline or matching year (generally the year before).
2. All students are matched based on previous year scores on the algebra exam, rounded to the nearest 0.01 z-score unit.
3. A propensity score is then created using FRL status (using all three designations: free lunch, reduced lunch, and paid lunch), race/ethnicity (African-American, Asian-American or Pacific Islander, Hispanic-American, Native American, White, or “Two or more races”), and gender.
4. Finally, all matches are based on guaranteeing exact matches from step 1 and 2, and the closest available propensity score match from step 3.

**C. 11<sup>th</sup> Grade Literacy EOC Matching Process**

1. Students had to have test scores in both 11<sup>th</sup> Grade Literacy and 8<sup>th</sup> Grade Literacy three years prior. Thus, if a student skipped a grade or was retained, they would not be included here.
2. All students are matched based on 8<sup>th</sup> Grade Literacy exam scores, three years prior, rounded to the nearest 0.01 z-score unit.
3. A propensity score is then created using FRL status (using all three designations: free lunch, reduced lunch, and paid lunch), race/ethnicity (African-American, Asian-American or Pacific Islander, Hispanic-American, Native American, White, or “Two or more races”), and gender.
4. Finally, all matches are based on guaranteeing exact matches from step 2, and the closest available propensity score match from step 3.

**IV. Comparison Analysis**

- A. Regression Analysis
- B. Analysis Types: All Charters, Conversion Charters, Open-enrollment Charters, Individual Schools
- C. Other subgroup studies: Charter School Age, Open-enrollment Schools with Waitlists, By Location (LR Metro v. Other), Student Demographic Served (% FRL)

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<sup>34</sup> If the sample size for any particular analysis was less than 15, those schools were omitted.

**Appendix D: Baseline Equivalency by School Type**

*Open-enrollment Charter Schools*

**Table D1.** Baseline Equivalency for Benchmark Analysis in Math, Open-enrollment, 2011-14

	2011-12			2012-13			2013-14		
	Charter	Comparison	Difference	Charter	Comparison	Difference	Charter	Comparison	Difference
Number of Observations	2,292	2,292	-	2,822	2,822	-	3,493	3,493	-
Average Grade	6.20	6.20	-	6.16	6.16	-	6.13	6.13	-
Prior Year Math Z-Score	-0.12	-0.12	(0.00)	-0.14	-0.14	(0.00)	-0.05	-0.05	(0.00)
Prior Year Literacy Z-Score	-0.02	-0.04	0.02	-0.03	-0.05	0.02	-0.04	-0.01	(0.03)
% FRL	0.45	0.49	(0.04) ***	0.50	0.54	(0.04) ***	0.61	0.65	(0.04)
% Minority	0.54	0.54	(0.00)	0.57	0.55	0.01	0.55	0.55	0.00
% Female	0.53	0.52	0.00	0.51	0.51	(0.00)	0.50	0.49	0.00

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Table D2.** Baseline Equivalency for Benchmark Analysis in Literacy, Open-enrollment, 2011-14

	2011-12			2012-13			2013-14		
	Charter	Comparison	Difference	Charter	Comparison	Difference	Charter	Comparison	Difference
Number of Observations	2,215	2,215	-	2,775	2,775	-	3,360	3,360	-
Average Grade	6.20	6.20	-	6.16	6.16	-	6.15	6.15	-
Prior Year Math Z-Score	-0.07	-0.05	(0.02)	-0.11	-0.09	(0.02)	0.00	-0.03	0.03
Prior Year Literacy Z-Score	0.02	0.03	(0.00)	0.02	0.03	(0.00)	0.03	0.03	(0.00)
% FRL	0.44	0.53	(0.08) ***	0.48	0.56	(0.07) ***	0.78	0.79	(0.00)
% Minority	0.54	0.55	(0.01)	0.57	0.57	0.00	0.54	0.54	0.01
% Female	0.53	0.52	0.01	0.51	0.50	0.01	0.51	0.50	0.00

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Table D3.** Baseline Equivalency for Geometry EOC Analysis (Matched on Algebra Score), Open-enrollment, 2011-14

	2011-12			2012-13			2013-14		
	Charter	Comparison	Difference	Charter	Comparison	Difference	Charter	Comparison	Difference
Number of Observations	333	333	-	312	312	-	260	260	-
Average Grade	9.20	9.20	-	9.37	9.37	-	9.42	9.42	-
Algebra Z-Score	0.12	0.12	(0.00)	0.14	0.15	(0.01)	0.19	0.19	(0.00)
% FRL	0.31	0.36	(0.05)	0.37	0.47	(0.10) **	0.38	0.39	(0.01)
% Minority	0.46	0.44	0.02	0.48	0.51	(0.03)	0.48	0.45	0.03
% Female	0.58	0.58	-	0.54	0.59	(0.04)	0.60	0.58	0.03

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Table D4.** Baseline Equivalency for 11<sup>th</sup> Grade Literacy EOC Analysis (Matched on 8<sup>th</sup> Grade Literacy), Open-enrollment, 2011-14

	2011-12			2012-13			2013-14		
	Charter	Comparison	Difference	Charter	Comparison	Difference	Charter	Comparison	Difference
Number of Observations	244	244	-	288	288	-	323	323	-
Average Grade	11.00	11.00	-	11.00	11.00	-	11.00	11.00	-
8 <sup>th</sup> Grade Literacy Z-Score	0.36	0.36	(0.00)	0.43	0.43	(0.00)	0.32	0.32	(0.00)
% FRL	0.35	0.34	0.01	0.72	0.66	0.05	0.33	0.35	(0.01)
% Minority	0.44	0.42	0.02	0.48	0.47	0.00	0.52	0.48	0.04
% Female	0.59	0.58	0.02	0.58	0.61	(0.03)	0.57	0.57	(0.01)

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

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*District Conversion Charter Schools*

**Table D5.** Baseline Equivalency for Benchmark Analysis in Math, District Conversion, 2011-14

	2011-12			2012-13			2013-14		
	Charter	Comparison	Difference	Charter	Comparison	Difference	Charter	Comparison	Difference
Number of Observations	1,370	1,370	-	1,433	1,433	-	1,412	1,412	-
Average Grade	6.49	6.49	-	6.33	6.33	-	6.26	6.26	-
Prior Year Math Z-Score	-0.45	-0.45	(0.00)	-0.45	-0.45	(0.00)	-0.46	-0.46	(0.00)
Prior Year Literacy Z-Score	-0.45	-0.43	(0.02)	-0.40	-0.44	0.04	-0.40	-0.41	0.01
% FRL	0.89	0.83	0.06 **	0.84	0.82	0.02 *	0.83	0.83	(0.00)
% Minority	0.74	0.70	0.05 **	0.63	0.61	0.02	0.60	0.59	0.02
% Female	0.50	0.49	0.01	0.51	0.50	0.01	0.49	0.50	(0.00)

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Table D6.** Baseline Equivalency for Benchmark Analysis in Literacy, District Conversion, 2011-14

	2011-12			2012-13			2013-14		
	Charter	Comparison	Difference	Charter	Comparison	Difference	Charter	Comparison	Difference
Number of Observations	1,351	1,351	-	1,310	1,310	-	1,227	1,227	-
Average Grade	6.50	6.50	-	6.29	6.29	-	6.28	6.28	-
Prior Year Math Z-Score	-0.40	-0.46	0.06	-0.36	-0.36	(0.00)	-0.34	-0.37	0.03
Prior Year Literacy Z-Score	-0.41	-0.40	(0.00)	-0.35	-0.35	(0.00)	-0.26	-0.26	(0.00)
% FRL	0.89	0.81	0.08 **	0.83	0.81	0.03 *	0.81	0.80	0.02
% Minority	0.74	0.67	0.07 **	0.63	0.59	0.04 **	0.62	0.58	0.04 **
% Female	0.52	0.52	0.00	0.51	0.50	0.01	0.52	0.51	0.01

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Table D7.** Baseline Equivalency for Geometry EOC Analysis (Matched on Algebra Score), District Conversion, 2011-14

	2011-12			2012-13			2013-14		
	Charter	Comparison	Difference	Charter	Comparison	Difference	Charter	Comparison	Difference
Number of Observations	150	150	-	141	141	-	448	448	-
Average Grade	9.75	9.75	-	9.91	9.91	-	9.91	9.91	-
Algebra Z-Score	0.14	0.14	(0.00)	0.04	0.04	(0.00)	-0.19	-0.19	(0.01)
% FRL	0.68	0.72	(0.04)	0.57	0.67	(0.10)	0.74	0.67	0.08 **
% Minority	0.09	0.07	0.02	0.08	0.06	0.01	0.59	0.71	(0.12) ***
% Female	0.45	0.53	(0.07)	0.52	0.48	0.04	0.41	0.42	(0.01)

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Table D8.** Baseline Equivalency for 11<sup>th</sup> Grade Literacy EOC Analysis (Matched on 8<sup>th</sup> Grade Literacy), District Conversion, 2011-14

	2011-12			2012-13			2013-14		
	Charter	Comparison	Difference	Charter	Comparison	Difference	Charter	Comparison	Difference
Number of Observations	215	215	-	278	278	-	543	543	-
Average Grade	11.00	11.00	-	11.00	11.00	-	11.00	11.00	-
8 <sup>th</sup> Grade Literacy Z-Score	0.43	0.43	(0.00)	0.38	0.38	(0.00)	0.20	0.20	(0.00)
% FRL	0.59	0.65	(0.06)	0.63	0.66	(0.03)	0.67	0.64	0.03
% Minority	0.06	0.10	(0.04)	0.08	0.12	(0.03)	0.31	0.26	0.05 *
% Female	0.55	0.53	0.02	0.54	0.50	0.03	0.52	0.53	(0.01)

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

## Appendix E: Explanation of Meta-Analytic Average Calculations

Any time averages across years or subjects are presented, these are meta-analytic averages that are the best way to average effect sizes. In addition, the standard error of the effect size in order to determine the level of statistical significance for each estimate. Details on these calculations are below:

### Overall Effect Size

- The overall effect size is a weighted average where the weight is the inverse of the variance of that effect size.
- Similar to weighting by the sample size, weighting for the variance takes into account the relative sample size for each effect size, as well as a level of confidence for each estimate.
- Weighting by the inverse of the variance applies heavier weights to estimates of effect sizes that are more certain and applies smaller weights to estimates that are less certain; essentially, this method gives greater weight to effect sizes derived from larger sample sizes.

Average Effect Size is:

$$\overline{ES} = \frac{\sum (w \times ES)}{\sum w}$$

Where:

$ES$  = a particular effect size and

$$w = \frac{1}{\frac{var(ES)}{1}}$$

### Standard Error of the Effect Size

- All standard errors and associated p-values and significance levels for the meta-analytic averaged effect size are calculated as the square root of 1 divided by the sum of the inverse variances.

$$se_{\overline{ES}} = \sqrt{\frac{1}{\sum w}}$$

**Appendix F: Academic Effect of Charter Schools, Regression Results, 2011-14**

**Table F1. Academic Effect of All Charter Schools in Math Benchmarks, 2011-14**

	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>0.0199</b> <b>(0.0124)</b>	<b>0.0407 ***</b> <b>(0.0117)</b>	<b>0.00534</b> <b>(0.0111)</b>
<b>Prior Year Math Z-Score</b>	0.656 *** (0.0109)	0.681 *** (0.00995)	0.637 *** (0.00960)
<b>Economic Disadvantage (FRL)</b>	-0.0783 *** (0.0153)	-0.0824 *** (0.0140)	-0.0856 *** (0.0127)
<b>African American</b>	-0.144 *** (0.0155)	-0.102 *** (0.0141)	-0.0897 *** (0.0126)
<b>Hispanic</b>	-0.0514 * (0.0287)	-0.0168 (0.0251)	-0.0331 (0.0226)
<b>Other Non-White Race</b>	0.0599 (0.0478)	0.15 *** (0.0414)	0.0995 *** (0.0332)
<b>Female</b>	-0.0689 *** (0.0130)	-0.054 *** (0.0121)	-0.0701 *** (0.0112)
<b>Prior Year Literacy Z-Score</b>	0.195 *** (0.0105)	0.187 *** (0.00926)	0.232 *** (0.00961)
<b>Switched Schools</b>	-0.0458 *** (0.0126)	-0.0918 *** (0.0119)	-0.0915 *** (0.0111)
<b>Constant</b>	0.0918 *** (0.0154)	0.137 *** (0.0143)	0.142 *** (0.0133)
<b>Observations</b>	7,324	8,510	9,810
<b>Adjusted R<sup>2</sup></b>	0.7102	0.7063	0.7126

\*Significant at the 10% level, \*\*Significant at the 5% level, \*\*\*Significant at the 1% level

**Explanation of Terms for Table F1**

<b>Variable</b>	<b>Description</b>
Charter Effect	The effect size of being enrolled in a charter school.
Prior Year Math Z-Score	The effect of previous year Math score on current year score.
Economic Disadvantage (FRL)	The effect of being eligible for Free or Reduced Lunch.
African-American	The effect of being an African-American student.
Hispanic	The effect of being a Hispanic student.
Other Non-White Race	The effect of being a student of an other non-white race.
Female	The effect of being female.
Prior Year Literacy Z-Score	The effect of previous year Literacy score on current year score.
Switched Schools	The effect of having switched schools from the previous year.
Constant	The starting point for outcomes to build from, using other variables.

**Table F2. Academic Effect of All Charter Schools in Literacy Benchmarks, 2011-14**

	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>-0.000235</b> <b>(0.0136)</b>	<b>0.0321 ***</b> <b>(0.0122)</b>	<b>-0.0143</b> <b>(0.0114)</b>
<b>Prior Year Literacy Z-Score</b>	0.614 *** (0.0119)	0.602 *** (0.0110)	0.647 *** (0.0106)
<b>Economic Disadvantage (FRL)</b>	-0.096 *** (0.0167)	-0.0623 *** (0.0147)	-0.0464 *** (0.0156)
<b>African American</b>	-0.0572 *** (0.0172)	-0.0447 *** (0.0152)	-0.0645 *** (0.0130)
<b>Hispanic</b>	0.00524 (0.0302)	0.0182 (0.0266)	-0.0560 ** (0.0232)
<b>Other Non-White Race</b>	-0.0712 ** (0.0324)	0.0105 (0.0322)	0.0130 (0.0273)
<b>Female</b>	0.142 *** (0.0141)	0.179 *** (0.0126)	0.146 *** (0.0114)
<b>Prior Year Math Z-Score</b>	0.22 *** (0.0113)	0.234 *** (0.00973)	0.216 *** (0.00943)
<b>Switched Schools</b>	-0.0606 *** (0.0139)	-0.0993 *** (0.0124)	-0.0500 *** (0.0114)
<b>Constant</b>	0.0180 (0.0165)	-0.00355 (0.0146)	0.00324 (0.0172)
<b>Observations</b>	7,132	8,170	9,166
<b>Adjusted R<sup>2</sup></b>	0.6709	0.6721	0.7076

*\*Significant at the 10% level, \*\*Significant at the 5% level, \*\*\*Significant at the 1% level*

**Explanation of Terms for Table F2**

<b>Variable</b>	<b>Description</b>
Charter Effect	The effect size of being enrolled in a charter school.
Prior Year Literacy Z-Score	The effect of previous year Literacy score on current year score.
Economic Disadvantage (FRL)	The effect of being eligible for Free or Reduced Lunch.
African-American	The effect of being an African-American student.
Hispanic	The effect of being a Hispanic student.
Other Non-White Race	The effect of being a student of an other non-white race.
Female	The effect of being female.
Prior Year Math Z-Score	The effect of previous year Math score on current year score.
Switched Schools	The effect of having switched schools from the previous year.
Constant	The starting point for outcomes to build from, using other variables.

**Table F3.** Academic Effect of All Charter Schools in Geometry, 2011-14

	2011-12	2012-13	2013-14
<b>Charter Effect</b>	<b>-0.192 ***</b> <b>(0.0329)</b>	<b>-0.0735 **</b> <b>(0.0335)</b>	<b>-0.0356</b> <b>(0.0285)</b>
<b>Algebra Z-Score</b>	0.786 *** (0.0275)	0.829 *** (0.0244)	0.779 *** (0.0213)
<b>Economic Disadvantage (FRL)</b>	-0.0236 (0.0357)	-0.142 *** (0.0351)	-0.129 *** (0.0303)
<b>African American</b>	-0.31 *** (0.0426)	-0.183 *** (0.0426)	-0.184 *** (0.0359)
<b>Hispanic</b>	-0.114 (0.0987)	0.00285 (0.0721)	0.00358 (0.0484)
<b>Other Non-White Race</b>	-0.102 * (0.0619)	0.130 (0.0938)	0.193 *** (0.0685)
<b>Female</b>	-0.0128 (0.0332)	-0.0681 ** (0.0336)	0.00428 (0.0282)
<b>Switched Schools</b>	-0.0126 (0.0388)	0.0271 (0.0386)	-0.0718 ** (0.0309)
<b>Took Geometry in 8th Grade</b>	0.421 *** (0.0509)	0.272 *** (0.0616)	0.507 *** (0.0751)
<b>Took Geometry in 9th Grade</b>	0.289 *** (0.0416)	0.146 *** (0.0427)	0.332 *** (0.0384)
<b>Took Geometry in 11th Grade</b>	-0.137 (0.234)	-0.0566 (0.317)	0.0426 (0.160)
<b>Constant</b>	-0.137 (0.234)	0.0108 (0.0391)	-0.0398 (0.0320)
<b>Observations</b>	966	906	1,416
<b>Adjusted R<sup>2</sup></b>	0.6745	0.6946	0.7088

\*Significant at the 10% level, \*\*Significant at the 5% level, \*\*\*Significant at the 1% level

Note: Baseline students took Geometry in 10th Grade.

**Explanation of Terms for Table F3**

Variable	Description
Charter Effect	The effect size of being enrolled in a charter school.
Algebra Z-Score	The effect of the student's underlying ability, as measured by Algebra score, on Geometry score.
Economic Disadvantage (FRL)	The effect of being eligible for Free or Reduced Lunch.
African-American	The effect of being an African-American student.
Hispanic	The effect of being a Hispanic student.
Other Non-White Race	The effect of being a student of an other non-white race.
Female	The effect of being female.
Switched Schools	The effect of having switched schools from the previous year.
Took Geometry in 8 <sup>th</sup> Grade	The effect of being in 8 <sup>th</sup> grade (relative to tenth grade).
Took Geometry in 9 <sup>th</sup> Grade	The effect of being in 9 <sup>th</sup> grade (relative to tenth grade).
Took Geometry in 11 <sup>th</sup> Grade	The effect of being in 11 <sup>th</sup> grade (relative to tenth grade).

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Constant	The starting point for outcomes to build from, using other variables.		
<b>Table F4. Academic Effect of All Charter Schools in 11<sup>th</sup> Grade Literacy, 2011-14</b>			
	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>-0.0292</b> <b>(0.0375)</b>	<b>0.0588 *</b> <b>(0.0352)</b>	<b>-0.0205</b> <b>(0.0280)</b>
<b>8<sup>th</sup> Grade Literacy Z-Score</b>	0.786 *** (0.0287)	0.795 *** (0.0265)	0.76 *** (0.0208)
<b>Economic Disadvantage (FRL)</b>	-0.257 *** (0.0387)	-0.214 *** (0.0363)	-0.266 *** (0.0288)
<b>African American</b>	-0.0482 (0.0480)	-0.263 *** (0.0422)	-0.154 *** (0.0313)
<b>Hispanic</b>	0.00528 (0.0917)	-0.0156 (0.0790)	0.0741 (0.0680)
<b>Other Non-White Race</b>	0.307* (0.157)	0.266 ** (0.127)	-0.124 (0.0952)
<b>Female</b>	0.00795 (0.0384)	0.0414 (0.0356)	0.114 *** (0.0282)
<b>Switched Schools</b>	0.0346 (0.123)	0.367 ** (0.160)	0.369 *** (0.0900)
<b>Constant</b>	0.0806 (0.130)	-0.317 * (0.162)	-0.211 ** (0.0916)
<b>Observations</b>	918	1,132	1,732
<b>Adjusted R<sup>2</sup></b>	0.5348	0.5305	0.6051

*\*Significant at the 10% level, \*\*Significant at the 5% level, \*\*\*Significant at the 1% level*

**Explanation of Terms for Table F4**

<b>Variable</b>	<b>Description</b>
Charter Effect	The effect size of being enrolled in a charter school.
8 <sup>th</sup> Grade Literacy Z-Score	The effect of the student's underlying ability in the subject, as measured by the 8 <sup>th</sup> grade score, on 11 <sup>th</sup> grade score.
Economic Disadvantage (FRL)	The effect of being eligible for Free or Reduced Lunch.
African-American	The effect of being an African-American student.
Hispanic	The effect of being a Hispanic student.
Other Non-White Race	The effect of being a student of an other non-white race.
Female	The effect of being female.
Switched Schools	The effect of having switched schools from the previous year.
Constant	The starting point for outcomes to build from, using other variables.

**Table F5.** Academic Effect of **Open-enrollment Charter Schools in Math Benchmarks**, 2011-14

	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>0.0110</b> <b>(0.0159)</b>	<b>0.0857 ***</b> <b>(0.0144)</b>	<b>-0.0155</b> <b>(0.0132)</b>
<b>Prior Year Math Z-Score</b>	0.668 *** (0.0133)	0.702 *** (0.0117)	0.635 *** (0.0113)
<b>Economic Disadvantage (FRL)</b>	-0.1 *** (0.0184)	0.0272 *** (0.00866)	-0.0951 *** (0.0147)
<b>African American</b>	-0.124 *** (0.0191)	-0.0902 *** (0.0173)	-0.1000 *** (0.0150)
<b>Hispanic</b>	-0.0123 (0.0370)	-0.00858 (0.0313)	-0.0494 * (0.0257)
<b>Other Non-White Race</b>	0.0660 (0.0502)	0.142 *** (0.0450)	0.115 *** (0.0364)
<b>Female</b>	-0.0586 *** (0.0168)	-0.0481 *** (0.0148)	-0.0821 *** (0.0133)
<b>Prior Year Literacy Z-Score</b>	0.18 *** (0.0131)	0.173 *** (0.0118)	0.236 *** (0.0119)
<b>Switched Schools</b>	-0.0447 *** (0.0165)	-0.0604 *** (0.0148)	-0.0937 *** (0.0132)
<b>Constant</b>	0.0902 *** (0.0186)	0.0226 (0.0270)	0.171 *** (0.0154)
<b>Observations</b>	4,584	5,644	6,986
<b>Adjusted R<sup>2</sup></b>	0.7035	0.7043	0.7143

*\*Significant at the 10% level, \*\*Significant at the 5% level, \*\*\*Significant at the 1% level*

**Explanation of Terms for Table F5**

<b>Variable</b>	<b>Description</b>
Charter Effect	The effect size of being enrolled in a charter school.
Prior Year Math Z-Score	The effect of previous year Math score on current year score.
Economic Disadvantage (FRL)	The effect of being eligible for Free or Reduced Lunch.
African-American	The effect of being an African-American student.
Hispanic	The effect of being a Hispanic student.
Other Non-White Race	The effect of being a student of an other non-white race.
Female	The effect of being female.
Prior Year Literacy Z-Score	The effect of previous year Literacy score on current year score.
Switched Schools	The effect of having switched schools from the previous year.
Constant	The starting point for outcomes to build from, using other variables.

**Table F6. Academic Effect of Open-enrollment Charter Schools in Literacy Benchmarks, 2011-14**

	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>0.0487 ***</b> <b>(0.0165)</b>	<b>0.0715 ***</b> <b>(0.0147)</b>	<b>-0.0294 **</b> <b>(0.0132)</b>
<b>Prior Year Literacy Z-Score</b>	0.563 *** (0.0146)	0.586 *** (0.0139)	0.633 *** (0.0127)
<b>Economic Disadvantage (FRL)</b>	-0.0568 *** (0.0197)	-0.0522 *** (0.0179)	-0.0659 *** (0.0153)
<b>African American</b>	-0.076 *** (0.0201)	-0.0170 (0.0190)	-0.0374 ** (0.0158)
<b>Hispanic</b>	0.0368 (0.0338)	0.0509 (0.0319)	-0.0107 (0.0273)
<b>Other Non-White Race</b>	-0.074 ** (0.0328)	-0.00795 (0.0348)	0.00875 (0.0293)
<b>Female</b>	0.16 *** (0.0171)	0.178 *** (0.0152)	0.144 *** (0.0131)
<b>Prior Year Math Z-Score</b>	0.212 *** (0.0133)	0.237 *** (0.0113)	0.206 *** (0.0110)
<b>Switched Schools</b>	-0.0673 *** (0.0170)	-0.0695 *** (0.0151)	-0.0519 *** (0.0131)
<b>Constant</b>	0.0123 (0.0195)	-0.0316 * (0.0176)	0.00600 (0.0148)
<b>Observations</b>	4,430	5,550	6,712
<b>Adjusted R<sup>2</sup></b>	0.6522	0.6475	0.6986

*\*Significant at the 10% level, \*\*Significant at the 5% level, \*\*\*Significant at the 1% level*

**Explanation of Terms for Table F6**

<b>Variable</b>	<b>Description</b>
Charter Effect	The effect size of being enrolled in a charter school.
Prior Year Literacy Z-Score	The effect of previous year Literacy score on current year score.
Economic Disadvantage (FRL)	The effect of being eligible for Free or Reduced Lunch.
African-American	The effect of being an African-American student.
Hispanic	The effect of being a Hispanic student.
Other Non-White Race	The effect of being a student of an other non-white race.
Female	The effect of being female.
Prior Year Math Z-Score	The effect of previous year Math score on current year score.
Switched Schools	The effect of having switched schools from the previous year.
Constant	The starting point for outcomes to build from, using other variables.

**Table F7. Academic Effect of Open-enrollment Charter Schools in Geometry, 2011-14**

	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>-0.175 ***</b> <b>(0.0388)</b>	<b>-0.0562</b> <b>(0.0410)</b>	<b>0.0505</b> <b>(0.0498)</b>
<b>Algebra Z-Score</b>	0.810 *** (0.0320)	0.840 *** (0.0291)	0.783 *** (0.0347)
<b>Economic Disadvantage (FRL)</b>	-0.0278 (0.0481)	-0.144 *** (0.0439)	-0.0921 * (0.0524)
<b>African American</b>	-0.285 *** (0.0480)	-0.219 *** (0.0504)	-0.239 *** (0.0589)
<b>Hispanic</b>	-0.184 * (0.103)	-0.00551 (0.0774)	-0.155 (0.103)
<b>Other Non-White Race</b>	-0.0249 (0.0676)	0.0617 (0.100)	0.132 (0.102)
<b>Female</b>	-0.00571 (0.0393)	-0.0434 (0.0408)	0.0321 (0.0485)
<b>Switched Schools</b>	-0.0521 (0.0499)	-0.00340 (0.0488)	0.0524 (0.0680)
<b>Took Geometry in 8th Grade</b>	0.393 *** (0.0540)	0.225 *** (0.0651)	0.365 *** (0.0853)
<b>Took Geometry in 9th Grade</b>	0.275 *** (0.0545)	0.122 ** (0.0501)	0.187 *** (0.0695)
<b>Took Geometry in 11th Grade</b>	-0.157 (0.244)	N/A N/A	N/A N/A
<b>Constant</b>	-0.00671 -0.046	0.0569 (0.0515)	-0.00577 (0.0588)
<b>Observations</b>	666	624	520
<b>Adjusted R<sup>2</sup></b>	0.7109	0.7219	0.7309

\*Significant at the 10% level, \*\*Significant at the 5% level, \*\*\*Significant at the 1% level

Note: Baseline students took Geometry in 10th Grade.

**Explanation of Terms for Table F7**

<b>Variable</b>	<b>Description</b>
Charter Effect	The effect size of being enrolled in a charter school.
Algebra Z-Score	The effect of Algebra score on Geometry score.
Economic Disadvantage (FRL)	The effect of being eligible for Free or Reduced Lunch.
African-American	The effect of being an African-American student.
Hispanic	The effect of being a Hispanic student.
Other Non-White Race	The effect of being a student of an other non-white race.
Female	The effect of being female.
Switched Schools	The effect of having switched schools from the previous year.
Took Geometry in 8 <sup>th</sup> grade	The effect of being in 8 <sup>th</sup> grade (relative to tenth grade).
Took Geometry in 9 <sup>th</sup> grade	The effect of being in 9 <sup>th</sup> grade (relative to tenth grade).
Took Geometry in 11 <sup>th</sup> grade	The effect of being in 11 <sup>th</sup> grade (relative to tenth grade).
Constant	The starting point for outcomes to build from, using other variables.

**Table F8.** Academic Effect of **Open-enrollment Charter Schools in 11<sup>th</sup> Grade Literacy**, 2011-14

	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>0.146 ***</b> <b>(0.0504)</b>	<b>0.162 ***</b> <b>(0.0508)</b>	<b>0.0564</b> <b>(0.0491)</b>
<b>8<sup>th</sup> Grade Literacy Z-Score</b>	0.788 *** (0.0375)	0.805 *** (0.0408)	0.756 *** (0.0369)
<b>Economic Disadvantage (FRL)</b>	-0.148 ** (0.0591)	-0.0350 (0.0622)	-0.202 *** (0.0489)
<b>African American</b>	-0.128 ** (0.0618)	-0.539 *** (0.0622)	-0.257 *** (0.0535)
<b>Hispanic</b>	-0.184 (0.120)	-0.210 (0.145)	-0.0338 (0.0994)
<b>Other Non-White Race</b>	0.0983 (0.186)	0.222 (0.157)	-0.604 *** (0.0985)
<b>Female</b>	-0.0460 (0.0512)	0.0785 (0.0515)	0.0398 (0.0494)
<b>Switched Schools</b>	0.216 ** (0.0844)	0.998 *** (0.348)	0.944 *** (0.106)
<b>Constant</b>	-0.0799 (0.0970)	-0.847 ** (0.353)	-0.668 *** (0.109)
<b>Observations</b>	488	576	646
<b>Adjusted R<sup>2</sup></b>	0.5726	0.5767	0.5596

*\*Significant at the 10% level, \*\*Significant at the 5% level, \*\*\*Significant at the 1% level*

**Explanation of Terms for Table F8**

<b>Variable</b>	<b>Description</b>
Charter Effect	The effect size of being enrolled in a charter school.
8 <sup>th</sup> Grade Literacy Z-Score	The effect of the student's underlying ability, as measured by the 8 <sup>th</sup> grade score, on 11 <sup>th</sup> grade score.
Economic Disadvantage (FRL)	The effect of being eligible for Free or Reduced Lunch.
African-American	The effect of being an African-American student.
Hispanic	The effect of being a Hispanic student.
Other Non-White Race	The effect of being a student of an other non-white race.
Female	The effect of being female.
Switched Schools	The effect of having switched schools from the previous year.
Constant	The starting point for outcomes to build from, using other variables.

**Table F9.** Academic Effect of **District Conversion Charter Schools in Math Benchmarks, 2011-14**

	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>0.0332 *</b> <b>(0.0199)</b>	<b>-0.0380 *</b> <b>(0.0205)</b>	<b>0.0540 ***</b> <b>(0.0205)</b>
<b>Prior Year Math Z-Score</b>	0.635 *** (0.0192)	0.629 *** (0.0182)	0.636 *** (0.0182)
<b>Economic Disadvantage (FRL)</b>	-0.0185 (0.0349)	-0.0534 * (0.0304)	-0.0163 (0.0308)
<b>African American</b>	-0.186 *** (0.0267)	-0.160 *** (0.0241)	-0.0794 *** (0.0234)
<b>Hispanic</b>	-0.119 *** (0.0461)	-0.0790 * (0.0411)	-0.00844 (0.0480)
<b>Other Non-White Race</b>	0.0466 (0.152)	0.0468 (0.108)	-0.0422 (0.0778)
<b>Female</b>	-0.0828 *** (0.0204)	-0.0547 *** (0.0205)	-0.0425 ** (0.0210)
<b>Prior Year Literacy Z-Score</b>	0.219 *** (0.0177)	0.204 *** (0.0154)	0.228 *** (0.0164)
<b>Switched Schools</b>	-0.0467 ** (0.0199)	-0.123 *** (0.0207)	-0.0828 *** (0.0205)
<b>Constant</b>	0.0736 ** (0.0326)	0.137 *** (0.0305)	0.0338 (0.0304)
<b>Observations</b>	2,740	2,866	2,824
<b>Adjusted R<sup>2</sup></b>	0.6963	0.6855	0.6758

*\*Significant at the 10% level, \*\*Significant at the 5% level, \*\*\*Significant at the 1% level*

**Explanation of Terms for Table F9**

<b>Variable</b>	<b>Description</b>
Charter Effect	The effect size of being enrolled in a charter school.
Prior Year Math Z-Score	The effect of previous year Math score on current year score.
Economic Disadvantage (FRL)	The effect of being eligible for Free or Reduced Lunch.
African-American	The effect of being an African-American student.
Hispanic	The effect of being a Hispanic student.
Other Non-White Race	The effect of being a student of an other non-white race.
Female	The effect of being female.
Prior Year Literacy Z-Score	The effect of previous year Literacy score on current year score.
Switched Schools	The effect of having switched schools from the previous year.
Constant	The starting point for outcomes to build from, using other variables.

**Table F10.** Academic Effect of **District Conversion Charter Schools, Literacy Benchmarks, 2011-14**

	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>-0.0801 ***</b> <b>(0.0235)</b>	<b>-0.0362</b> <b>(0.0223)</b>	<b>0.0289</b> <b>(0.0223)</b>
<b>Prior Year Literacy Z-Score</b>	0.668 *** (0.0203)	0.602 *** (0.0184)	0.653 *** (0.0191)
<b>Economic Disadvantage (FRL)</b>	-0.0760 ** (0.0356)	-0.0238 (0.0285)	-0.111 *** (0.0301)
<b>African American</b>	-0.0174 (0.0313)	-0.120 *** (0.0258)	-0.0607 ** (0.0269)
<b>Hispanic</b>	-0.0624 (0.0565)	-0.0916 * (0.0480)	-0.12 ** (0.0484)
<b>Other Non-White Race</b>	-0.0840 (0.111)	0.0858 (0.0852)	0.0859 (0.0610)
<b>Female</b>	0.121 *** (0.0239)	0.192 *** (0.0224)	0.163 *** (0.0229)
<b>Prior Year Math Z-Score</b>	0.252 *** (0.0205)	0.245 *** (0.0188)	0.233 *** (0.0186)
<b>Switched Schools</b>	-0.0300 (0.0234)	-0.136 *** (0.0222)	-0.0409 * (0.0227)
<b>Constant</b>	-0.0107 (0.0342)	0.0130 (0.0277)	-0.00298 (0.0294)
<b>Observations</b>	2,702	2,620	2,454
<b>Adjusted R<sup>2</sup></b>	0.6663	0.6913	0.7156

*\*Significant at the 10% level, \*\*Significant at the 5% level, \*\*\*Significant at the 1% level*

**Explanation of Terms for Table F10**

<b>Variable</b>	<b>Description</b>
Charter Effect	The effect size of being enrolled in a charter school.
Prior Year Literacy Z-Score	The effect of previous year Literacy score on current year score.
Economic Disadvantage (FRL)	The effect of being eligible for Free or Reduced Lunch.
African-American	The effect of being an African-American student.
Hispanic	The effect of being a Hispanic student.
Other Non-White Race	The effect of being a student of an other non-white race.
Female	The effect of being female.
Prior Year Math Z-Score	The effect of previous year Math score on current year score.
Switched Schools	The effect of having switched schools from the previous year.
Constant	The starting point for outcomes to build from, using other variables.

**Table F11.** Academic Effect of **District Conversion Charter Schools in Geometry, 2011-14**

	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>-0.225 ***</b> <b>(0.0613)</b>	<b>-0.0973 *</b> <b>(0.0569)</b>	<b>-0.0852 **</b> <b>(0.0375)</b>
<b>Algebra Z-Score</b>	0.708 *** (0.0550)	0.783 *** (0.0471)	0.773 *** (0.0253)
<b>Economic Disadvantage (FRL)</b>	0.0183 (0.0700)	-0.0496 (0.0595)	-0.0746 * (0.0400)
<b>African American</b>	-0.417 *** (0.148)	0.00281 (0.165)	-0.202 *** (0.0483)
<b>Hispanic</b>	0.110 (0.205)	-0.248 (0.265)	0.0476 (0.0543)
<b>Other Non-White Race</b>	-0.311 *** (0.0648)	0.290 (0.212)	0.131 (0.0820)
<b>Female</b>	-0.0392 (0.0619)	-0.124 ** (0.0591)	-0.0568 * (0.0339)
<b>Switched Schools</b>	0.0827 (0.0686)	0.101 (0.0642)	-0.0752 * (0.0395)
<b>Took Geometry in 9th Grade</b>	0.4 *** (0.0753)	0.2 ** (0.0988)	0.318 *** (0.0596)
<b>Constant</b>	-0.0630 (0.0771)	0.00840 (0.277)	0.0734 (0.156)
<b>Observations</b>	300	282	896
<b>Adjusted R<sup>2</sup></b>	0.5706	0.5921	0.6525

\*Significant at the 10% level, \*\*Significant at the 5% level, \*\*\*Significant at the 1% level

Note: Baseline students took Geometry in 10th Grade.

**Explanation of Terms for Table F11**

<b>Variable</b>	<b>Description</b>
Charter Effect	The effect size of being enrolled in a charter school.
Algebra Z-Score	The effect of Algebra score on Geometry score.
Economic Disadvantage (FRL)	The effect of being eligible for Free or Reduced Lunch.
African-American	The effect of being an African-American student.
Hispanic	The effect of being a Hispanic student.
Other Non-White Race	The effect of being a student of an other non-white race.
Female	The effect of being female.
Switched Schools	The effect of having switched schools from the previous year.
Took Geometry in 8 <sup>th</sup> grade	The effect of being in 8 <sup>th</sup> grade (relative to tenth grade).
Took Geometry in 9 <sup>th</sup> grade	The effect of being in 9 <sup>th</sup> grade (relative to tenth grade).
Took Geometry in 11 <sup>th</sup> grade	The effect of being in 11 <sup>th</sup> grade (relative to tenth grade).
Constant	The starting point for outcomes to build from, using other variables.

**Table F12.** Academic Effect of **District Conversion Charter Schools in 11<sup>th</sup> Grade Literacy**, 2011-14

	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>-0.241 ***</b> <b>(0.0528)</b>	<b>-0.0331</b> <b>(0.0452)</b>	<b>-0.0561 *</b> <b>(0.0333)</b>
<b>8th Grade Literacy Z-Score</b>	0.778 *** (0.0419)	0.768 *** (0.0332)	0.756 *** (0.0249)
<b>Economic Disadvantage (FRL)</b>	-0.197 *** (0.0578)	-0.118 ** (0.0499)	-0.211 *** (0.0390)
<b>African American</b>	-0.496 *** (0.116)	-0.188 (0.152)	-0.159 *** (0.0418)
<b>Hispanic</b>	0.0711 (0.108)	-0.00288 (0.0803)	0.0756 (0.0881)
<b>Other Non-White Race</b>	0.545 *** (0.154)	0.0423 (0.165)	0.118 (0.115)
<b>Female</b>	0.0556 (0.0557)	-0.0220 (0.0455)	0.141 *** (0.0337)
<b>Switched Schools</b>	-0.169 (0.279)	0.0559 (0.115)	0.22 ** (0.101)
<b>Constant</b>	0.271 (0.289)	-0.0941 (0.116)	-0.143 (0.104)
<b>Observations</b>	430	556	1,086
<b>Adjusted R<sup>2</sup></b>	0.5372	0.5281	0.6356

*\*Significant at the 10% level, \*\*Significant at the 5% level, \*\*\*Significant at the 1% level*

**Explanation of Terms for Table F12**

<b>Variable</b>	<b>Description</b>
Charter Effect	The effect size of being enrolled in a charter school.
8 <sup>th</sup> Grade Literacy Z-Score	The effect of the student's underlying ability, as measured by the 8 <sup>th</sup> grade score, on 11 <sup>th</sup> grade score.
Economic Disadvantage (FRL)	The effect of being eligible for Free or Reduced Lunch.
African-American	The effect of being an African-American student.
Hispanic	The effect of being a Hispanic student.
Other Non-White Race	The effect of being a student of an other non-white race.
Female	The effect of being female.
Switched Schools	The effect of having switched schools from the previous year.
Constant	The starting point for outcomes to build from, using other variables.

**Appendix G: School-by-School Academic Effect Snapshots**

**Table G1.** Academic Effects of Open-enrollment Charter Schools, 2011-14

School	Year Opened	Academic Impacts of Open-Enrollment Schools (Average 1-Yr Impacts)				
		Overall	Benchmark Math	Benchmark Literacy	Geometry	11th Grade Literacy
Academics Plus <sup>1</sup>	2001	0.02	-0.037	0.06 **	0.004	-0.099
Arkansas Virtual Academy <sup>2</sup>	2007	-0.077 ***	-0.068 ***	-0.087 ***	N/A	N/A
Arkansas Arts Academy <sup>3</sup>	2001	-0.061 ***	-0.049 *	-0.056 **	-0.222 ***	0.014
Covenant Keepers	2008	0.017	-0.059	0.141 ***	-0.14	N/A
Dreamland Academy <sup>4</sup>	2007	0.293 ***	0.132	0.607 ***	N/A	N/A
eSTEM <sup>5</sup>	2008	0.044	0.065 ***	0.052 **	-0.161 ***	0.045
Haas Hall Academy	2004	0.091 ***	0.46 ***	0.028	0.001	0.301 ***
Imboden Area Charter School	2002	-0.028	0.038	-0.11	N/A	N/A
Jacksonville Lighthouse	2009	0.06 ***	0.083 ***	0.041 *	-0.015	N/A
KIPP Blytheville	2010	0.121 ***	0.095 **	0.148 ***	N/A	N/A
KIPP Delta	2002	0.059 ***	-0.037	0.119 ***	0.203	0.258 ***
LISA Academy	2004	0.02	0.032	0.023	-0.174 **	0.123
LISA Academy North Little Rock	2008	0.038 *	0.099 ***	-0.011	-0.058	0.185
Little Rock Preparatory Academy	2009	0.021	0.031	0.01	N/A	N/A
Northwest Arkansas Classical Acad.	2013	-0.041	-0.072	-0.022	N/A	N/A
Pine Bluff Lighthouse Academy	2011	0.038	0.023	0.051	N/A	N/A
Premier High School of Little Rock <sup>6</sup>	2013	N/A	N/A	N/A	N/A	N/A
Quest Middle School of Pine Bluff	2013	-0.226 **	-0.256 *	-0.199	N/A	N/A
SIA Tech <sup>6</sup>	2011	N/A	N/A	N/A	N/A	N/A
<b>Overall Open-Enrollment</b>		<b>0.023 ***</b>	<b>0.025 ***</b>	<b>0.024 ***</b>	<b>-0.078 ***</b>	<b>0.120 ***</b>

<sup>1</sup> The schools run by Academics Plus are now Maumelle Charter Elementary/High School.

<sup>2</sup> ARVA opened in 2007. The charter was originally approved in 2003, but due to funding issues they did not actual open until the fall of 2007.

<sup>3</sup> Arkansas Arts Academy was previously called Benton County School of the Arts.

<sup>4</sup> Dreamland Academy closed June 30, 2012.

<sup>5</sup> eSTEM combined to one school for analysis purposes.

<sup>6</sup> Premier High School and SIA Tech had less than 15 matches for all relevant analyses, so they have been excluded from this report.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

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**Table G2.** Academic Effects of District Conversion Charter Schools, 2011-14

School	Year Opened	Academic Impacts of District Conversion Schools (Average 1-Yr Impacts)				
		Overall	Benchmark Math	Benchmark Literacy	Geometry	11th Grade Literacy
The Academies at Jonesboro High	2013	0.018	N/A	N/A	-0.037	0.02
Badger Academy <sup>1</sup>	2007	N/A	N/A	N/A	N/A	N/A
Bauxite Miner Academy <sup>1</sup>	2013	N/A	N/A	N/A	N/A	N/A
Blytheville Charter School and ALC <sup>1</sup>	2001	N/A	N/A	N/A	N/A	N/A
Blytheville High School – New Tech <sup>1</sup>	2013	N/A	N/A	N/A	N/A	N/A
Brunson New Vision Charter	2013	0.252 ***	0.3 ***	0.18	N/A	N/A
Cabot ACE	2004	-0.144 ***	0.076	-0.106	-0.31 ***	-0.134 ***
Cloverdale Aerospace Technology	2010	-0.042 ***	-0.053 ***	-0.025	N/A	N/A
Cross County Elem. Tech. Academy	2012	-0.009	-0.077	0.063	N/A	N/A
Cross County New Tech HS	2011	0.009	-0.088	-0.015	0.141 *	0.004
Eastside New Vision <sup>2</sup>	2012	N/A	N/A	N/A	N/A	N/A
Lincoln ACE <sup>1</sup>	2009	N/A	N/A	N/A	N/A	N/A
Lincoln Middle Acad. of Excellence	2010	-0.059 ***	0.014	-0.155 ***	N/A	N/A
Lincoln High School New Tech	2012	-0.08 **	-0.271 ***	0.041	0.054	-0.189 ***
Mtn. Home High School Career Acad.	2003	-0.216 ***	N/A	N/A	-0.494 ***	-0.103 ***
Oak Grove Health, Wellness, Enviro.	2009	0.066	0.22 ***	-0.115	N/A	N/A
Osceola STEM Academy	2012	0.057	0.096 **	-0.007	0.096 **	-0.007
Ridgeroad Charter Middle School	2003	0.109 ***	0.199 ***	-0.017	N/A	N/A
Rogers New Tech. High School	2013	-0.391 ***	N/A	N/A	-0.391 ***	N/A
Vilonia Acad. of Service and Tech.	2007	0.075 **	0.158 ***	0.011	N/A	N/A
Vilonia Academy of Technology	2004	0.029	0.183 *	-0.058	N/A	N/A
Washington Academy	2013	0.039	N/A	N/A	0.166	-0.31
<b>Overall District Conversion</b>		<b>-0.0212 ***</b>	<b>0.017</b>	<b>-0.027 **</b>	<b>-0.117 ***</b>	<b>-0.088 ***</b>

<sup>1</sup>Badger Academy, Bauxite Miner Academy, Blytheville Charter School and ALC, Blytheville High School – New Tech, and Lincoln ACE had less than 15 matches for all relevant analyses, so they have been excluded from this report.

<sup>2</sup>Eastside New Vision Charter is K-3 only so was excluded from the 4-8 Benchmark Analysis.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Appendix H: List of Charter Schools by Waitlist, 2011-14**

Table F1. List of Charter Schools by Waitlist, 2011-14\*

<b>Charter School</b>	<b>Year Opened</b>	<b>Waitlist 11-12</b>	<b>Waitlist 12-13</b>	<b>Waitlist 13-14</b>
Academics Plus	2001	Yes	Yes	Yes
Arkansas Virtual Academy	2007	Unreported	Unreported	Unreported
Arkansas Arts Academy	2001	Unreported	Unreported	Yes
Covenant Keepers	2008	Unreported	Unreported	Unreported
Dreamland Academy	2007	Unreported	N/A	N/A
eSTEM Elementary	2008	Yes	Yes	Yes
eSTEM High School	2008	Yes	Yes	Yes
eSTEM Middle School	2008	Yes	Yes	Yes
Haas Hall Academy	2004	Unreported	Unreported	Yes
Imboden Area Charter School	2002	Unreported	Unreported	Unreported
Jacksonville Lighthouse	2009	Unreported	Unreported	Yes
KIPP Blytheville	2010	Yes	Yes	Yes
KIPP Delta	2002	Yes	Yes	Yes
LISA Academy	2004	Yes	Yes	Yes
LISA Academy North Little Rock	2008	Yes	Yes	Yes
Little Rock Preparatory Academy	2009	Yes	Yes	Unreported
Northwest Arkansas Classical Academy	2013	N/A	N/A	Yes
Pine Bluff Lighthouse Academy	2011	Unreported	Unreported	Unreported
Premier High School of Little Rock	2013	N/A	N/A	Unreported
Quest Middle School of Pine Bluff	2013	N/A	N/A	Unreported
SIA Tech	2011	Unreported	Unreported	Unreported

*\*Because of the high level of movement of students on waitlists, it is difficult to say if a school truly has no waitlist. For those who have no waitlist, their status is “Unreported,” which could mean there is no waitlist, or that the school is full and no waitlist was reported. No District Conversion schools were included as having a waitlist, even if there was a waitlist for oversubscription.*

**Appendix I: List of Open-enrollment Charter Schools by Location, 2011-14**

<b>School</b>	<b>Year Opened</b>	<b>Location</b>	<b>Little Rock Metro</b>
Academics Plus <sup>1</sup>	2001	Maumelle	Yes
Arkansas Virtual Academy <sup>2</sup>	2007	Entire State	No
Arkansas Arts Academy <sup>3</sup>	2001	Rogers	No
Covenant Keepers	2008	Little Rock	Yes
Dreamland Academy <sup>4</sup>	2007	Little Rock	Yes
eSTEM <sup>5</sup>	2008	Little Rock	Yes
Haas Hall Academy	2004	Fayetteville	No
Imboden Area Charter School	2002	Imboden	No
Jacksonville Lighthouse	2009	Jacksonville	Yes
KIPP Blytheville	2010	Blytheville	No
KIPP Delta	2002	Helena/W. Helena	No
LISA Academy	2004	Little Rock	Yes
LISA Academy North Little Rock	2008	N. Little Rock	Yes
Little Rock Preparatory Academy	2009	Little Rock	Yes
Northwest Arkansas Classical Academy	2013	Bentonville	No
Pine Bluff Lighthouse Academy	2011	Pine Bluff	No
Premier High School of Little Rock <sup>6</sup>	2013	Little Rock	Yes
Quest Middle School of Pine Bluff	2013	Pine Bluff	No
SIA Tech <sup>6</sup>	2011	Little Rock	Yes

<sup>1</sup> The schools run by Academics Plus are now Maumelle Charter Elementary/High School.

<sup>2</sup> ARVA opened in 2007. The charter was originally approved in 2003, but due to funding issues they did not actual open until the fall of 2007.

<sup>3</sup> Arkansas Arts Academy was previously called Benton County School of the Arts.

<sup>4</sup> Dreamland Academy closed June 30, 2012.

<sup>5</sup> eSTEM combined to one school for analysis purposes.

<sup>6</sup> Premier High School and SIA Tech had less than 15 matches for all relevant analyses, so they have been excluded from this report.

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

## Appendix J: School Report Cards

The last section of this report includes a report card for each school included in this three-year matching study. This section provides school-by-school results and is provided in a separate document. Not every school has effects included for every single year and/or subject test, but generally each school report will have the following structure:

**Page 1** is a school cover sheet with an overall summary of all results as well as characteristics of the school (location, type (open-enrollment or district conversion), grades served, year opened, and year closed, if applicable). Meta-analytical averages for overall Math effects (elementary and secondary combined) and overall Literacy effects (elementary and secondary combined) are included. In addition, each cover sheet has the “overall effect” for the school which is a meta-analytical average of all subject tests and all years available.

**Page 2** gives more detail on the calculation of results for elementary grades (essentially the grade three through grade eight) benchmark results. This page includes statistics on grades included in the analysis, enrollment in those grades, and the percent of students in those grades for which matches were found. Results for the Benchmark Math and Literacy exams, by year, are presented here.

**Page 3** is similar to page 2 except for the EOC results in the secondary grades (generally between grade eight through grade eleven). Results for the EOC exams in Geometry and 11<sup>th</sup> Grade Literacy, by year, are presented here.

**Page 4** provides more detail on the composition of the treatment group and its matched twin comparison group for the Benchmark Math analysis. These include measures of baseline equivalency with statistical significance given for any differences. More specifically, the tables show that in the prior year (the year before the year of analysis), Math scores for the students in the given charter school were equal to the Math scores for the students in the comparison group.

**Page 5** is the same as Page 4 except for the Benchmark Literacy analysis. Here again, the baseline equivalency tables are showing that the treatment group and comparison groups were similar on observables in the baseline year.

**Page 6** is the same as Page 4 except for the Geometry EOC analysis.

**Page 7** is the same as Page 4 except for the 11<sup>th</sup> Grade Literacy analysis.

**ARKANSAS CHARTER SCHOOL ACADEMIC EVALUATION:  
LOTTERY WAITLIST-MATCHING STUDY  
SCHOOL YEARS 2011-12 THROUGH 2013-14**

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## Executive Summary

In compliance with state law, the Arkansas Department of Education commissions a yearly evaluation of open-enrollment charter schools around the state. There have been annual evaluations since the 2005-06 school year through this current report. The latest iteration of the state charter evaluation provided a three-year study of the academic effect of all charter schools, including district conversions, using a “matched twin” student matching method. Achievement gains were reported for three evaluation years: 2011-12, 2012-13, and 2013-14 along with average annual effects. Effects were reported for both Math and Literacy at several levels: all schools combined, only conversion charters, only open-enrollment charters, individual schools, and by school subgroups. These subgroups included maturity of school, defined as 5 years or older as of the 2011-12 school year, waitlist status, location (Little Rock metro v. other), and income level of students served (at least or less than the state average of about 61% FRL). The matching process was conducted using data from the previous year for the Benchmark analyses, and from the previous year relevant to the subject for the End of Course (EOC) analyses.

The 3-Year Statewide Matching study found that, overall, charter schools (including open-enrollment and conversion schools) across the state had a statistically significant and positive effect in Math Benchmark test scores, while the Literacy Benchmark effect was not statistically significant when combining all three years. In general, the positive effects of open-enrollment charter schools in both Benchmark exams (Math and Literacy) were driven primarily by newer schools, schools with waitlists, schools in the Little Rock Metro area, and schools serving less well-off students ( $\geq$  State Average of about 61% FRL).

As commissioned, this current report provides a robustness check of the results of the 3-Year Statewide Matching analysis. This report focuses only on analyses using lottery and waitlist data available for 2012-13 for oversubscribed open-enrollment charters, with results specific to Benchmark exams (4<sup>th</sup> – 8<sup>th</sup> grade Literacy and Math). The EOC exam results are not included in this study. This report uses a subset of charter schools, within the geographic area of oversubscribed charter schools, which includes a smaller number of students overall than the more comprehensive 3-Year Statewide Matching study.

The original plan for this second report was to conduct a random assignment study in which the academic results of all of the student applicants who were admitted via lottery to the charter schools would be compared to the academic results of those students who applied but were not admitted. Had this been possible, there would be great confidence that any differences between the two groups in academic achievement observed after the charter students had been admitted would have been solely due to the influence of the charter schools themselves. This “gold standard” evaluation design allows for researchers to discount any concerns that any observed differences may be due to the pre-existing differences between those who apply for charters school seats and those who do not. In the ideal random assignment design, all participants were equally interested in applying to the charter schools; after some students enter charters by random lottery while others are not selected, the charter school attendance itself would be the only reasonable explanation for any differences in academic performance.

Unfortunately, due to the limitations of data collection and reporting, it was not possible to make firm conclusions about oversubscribed open-enrollment charter schools through a Randomized Control Trial (RCT) analysis. As an alternative, a “matched twin” student matching method was used that was

identical to the method used in the 3-Year Statewide Matching analysis to allow for the best possible comparison using all students attending oversubscribed charter schools and all waitlisted students. Charter students in each school were matched with similar traditional public school students who applied for charter schools but were not admitted (waitlisted) in the 2012-13 school year. Separate matches and analyses were conducted for Math and Literacy Benchmark assessments (outcomes in grades 4-8). This current analysis is referred to as the Waitlist-Matching analysis.

Given the data available, this quasi-experimental model is the best form of analysis on the charter students in the sample, since the waitlisted students with whom they are compared similarly were motivated to seek charter school admission. Thus, the primary self-selection threat to the validity of the study – that there are pre-existing differences in motivation between charter attendees and the comparison group – is not present in this design. Overall, this analysis is somewhat stronger in rigor but smaller in scope than the 3-Year Statewide Matching study, which is somewhat weaker in rigor but larger in scope. If the results from both approaches are similar, there is reasonable confidence that the findings are unbiased and apply to charter school students generally in Arkansas.

This Waitlist-Matching analysis found statistically significant and positive effects of public charter schools on Math Benchmark test scores and null effects on Literacy Benchmark test scores for 2012-13. Null effects were found for both subject Benchmark exams in 2013-14. These findings appear consistent with the results found in the 3-Year Statewide Matching evaluation (for schools that are in both samples and for the same two years included in both studies). Subgroup analyses of charter networks and charter schools by location indicate that, in general, the KIPP charter schools, outside the Little Rock Metro area, tend to perform better in math than other schools within the Little Rock area. However, performance of charter networks (eStem, LISA, KIPP) appears to differ among schools within networks. Small differences in results between the matched groups in the two studies, charter-waitlist matches and charter-TPS matches, could be attributed to the different matches and the number of students in the samples.

Reasonable conclusions that can be drawn from this current study are that the oversubscribed public charter schools in Arkansas have their clearest positive effect on student test scores in math; however, this finding is not consistent over both years of analysis. The school year 2012-13 appeared to be the stronger individual year for charter school performance, compared with 2013-14, consistent with the 3-Year Statewide Matching evaluation.

This evaluation had some limitations. First, the "gold standard" experimental design strategy could not be used because of differences in the types and amount of data collected from charter schools about their admissions lotteries. A quasi-experimental study design was implemented instead. A second limitation was the small sample of oversubscribed schools and relatively low student match rates. Most oversubscribed charters are found within the Little Rock metro area, signaling greater demand for charter schooling there. Several charter schools, by design or for other reasons, maintain low student populations and therefore have low numbers of students tested. Future studies should seek to conduct experimental evaluations on large representative populations of charter school applicants, if possible.

## Introduction

Educational choice as a school improvement strategy has been seriously contemplated since the 1960s. Providing choice to families and students who otherwise are often subject to the monopolistic traditional public schools could, in theory, create competition that spurs innovation in traditional public schools.<sup>35</sup> Nobel laureate economist Milton Friedman, from these early days, encouraged policy makers to “introduce competition and give the customers alternatives”<sup>36</sup> in the education sector, saying that the “injection of competition would do much to promote a healthy variety of schools.”<sup>37</sup>

One prominent form of school choice is public charter schooling, developed in Minnesota in the early 1990s. Charter schools are distinctive public schools freed to be more innovative but held accountable for student achievement. As public schools, they are open to all children, do not charge tuition, and do not have special entrance requirements.<sup>38</sup> These schools provide parents with a public school alternative to the traditional public schools in their neighborhoods. As of March, 2015, 43 states and the District of Columbia had charter school laws that vary widely by state.<sup>39</sup>

From these early roots, states across the country have responded with their own type of charter laws that allow for the emergence of individual charter schools as well as charter management organizations (CMOs) or charter networks that manage multiple charter schools. Arkansas passed its first charter school law in 1995 (Act 1126)<sup>40</sup> allowing conversion charter schools authorized by public school districts, and then a more general open-enrollment charter law in 1999 (Act 890).<sup>41</sup> The first two open-enrollment charter schools opened in Arkansas in 2001 and have operated continuously since that time: Academics Plus and Benton County School of the Arts.<sup>42</sup> <sup>43</sup> Conversion charter schools were slower to form; the earliest continually running school of this type was founded in 2003: Mountain Home High School Career Academy.<sup>44</sup>

<sup>35</sup> Wolf, Patrick J, and Anna J. Egalite. “Pursuing Innovation: How Can Educational Choice Transform K-12 Education in the U.S.” Friedman Foundation for Education Choice, April 2016, <http://www.edchoice.org/wp-content/uploads/2016/04/2016-4-Pursuing-Innovation-WEB-2.pdf>

<sup>36</sup> Friedman, Milton. Newsweek. “The Friedmans on School Choice.” *The Friedman Foundation for Educational Choice*, n.d. Web. 07 August 2014. <<http://www.edchoice.org/The-Friedmans/The-Friedmans-on-School-Choice>>.

<sup>37</sup> Friedman, Milton. Cap and Free. “The Friedmans on School Choice.” *The Friedman Foundation for Educational Choice*, n.d. Web. 07 August 2014. <<http://www.edchoice.org/The-Friedmans/The-Friedmans-on-School-Choice>>.

<sup>38</sup> National Alliance for Public Charter Schools. “What are Public Charter Schools?” Web. 15 December 2014.

<<http://www.publiccharters.org/get-the-facts/public-charter-schools/>>.

<sup>39</sup> Center for Education Reform. “Choice & Charter Schools: Laws & Legislation.” Web. 20 April 2016.

<https://www.edreform.com/issues/choice-charter-schools/laws-legislation/>.

<sup>40</sup> Mills, Jonathan N. “The Achievement Impacts of Arkansas Open-enrollment Charter Schools.” *Journal of Education Finance* 38.4 (2013): 322.

<[http://muse.jhu.edu/journals/journal\\_of\\_education\\_finance/v038/38.4.mills.pdf](http://muse.jhu.edu/journals/journal_of_education_finance/v038/38.4.mills.pdf)>.

<sup>41</sup> *Arkansas Quality Charter Schools Act of 2013*, Acts 1999, No. 890.

<[http://www.arkansased.org/public/userfiles/Learning\\_Services/Charter%20and%20Home%20School/Charter%20School-Division%20of%20Learning%20Services/Arkansas\\_Quality\\_Charter\\_Schools\\_Act\\_of\\_2013.pdf](http://www.arkansased.org/public/userfiles/Learning_Services/Charter%20and%20Home%20School/Charter%20School-Division%20of%20Learning%20Services/Arkansas_Quality_Charter_Schools_Act_of_2013.pdf)>.

<sup>42</sup> *Open-enrollment*. Arkansas Department of Education, n.d. Web. 13 August 2014.

<[http://www.arkansased.org/contact-us/charter-schools/charter\\_school\\_categories/open-enrollment](http://www.arkansased.org/contact-us/charter-schools/charter_school_categories/open-enrollment)>.

<sup>43</sup> The Benton County School of the Arts is now the Arkansas Arts Academy.

<sup>44</sup> *District-Conversion*. Arkansas Department of Education, n.d. Web. 13 August 2014.

<[http://www.arkansased.org/contact-us/charter-schools/charter\\_school\\_categories/district-conversion](http://www.arkansased.org/contact-us/charter-schools/charter_school_categories/district-conversion)>.

Since the institution of the original Arkansas charter school laws, the state's charter schools have grown in number and spread out across the state from Little Rock to rural communities throughout Arkansas. During the 2011-12 school year (the first year of baseline data included in this report), the Arkansas K-12 public school system was responsible for 468,656 students in 260 school districts (mean enrollment: 1,802; median: 893), including all open-enrollment charter school districts. From these 260 districts, there were 17 open-enrollment charter school districts and 12 conversion charter schools, which remain part of the remaining 243 school districts.

By the final year of this report, 2013-14, the Arkansas K-12 public school system was responsible for 474,995 students in 260 districts (mean enrollment: 1,841; median: 889), including all open-enrollment charter school districts. In 2013-14, there were 18 open-enrollment charter schools and 18 conversion charter schools, which remain part of the remaining 242 school districts. Out of the 18 open-enrollment charter schools in the state, 7 were oversubscribed and included in this analysis.

The Data section of this report contains more descriptive information about the state's charter schools. The analysis focuses exclusively on open-enrollment charter schools within the geographic areas of those with waitlists reported in the 2012-13 school year. This report uses Arkansas state test scores to compare students enrolled in Arkansas charter schools to those students who share similar observable characteristics (grade level, test scores, economic status, minority status, gender, and others), who applied to oversubscribed charter schools in 2012-13, but who were not admitted and, instead, enrolled in a traditional public school.

The following sections will introduce the background of this study, give an introduction to similar studies that have looked at Arkansas charter schools, explain the data that were used for this analysis, explain the methods and rules that governed the analysis, and finally report the results of the study of charter schools for the Lottery Waitlist-Matching study.

## Background

Since the 2005-06 school year, there has been an annual evaluation of Arkansas open-enrollment charter schools, as commissioned by law. The purpose of the annual evaluation is to provide a snapshot of the status of Arkansas charter schools – their academic outcomes and parent interest in them. Except for the first academic year, and through 2010-11, all studies had been conducted by Metis Associates. The Metis reports are covered in the literature review.

A research team from the University of Arkansas – Fayetteville, led by Professors Gary Ritter and Patrick Wolf, won the competitive bidding process to perform the evaluation of all Arkansas charter schools, including district conversion charters, for the two school years: 2011-12 and 2012-13. Part of the proposed evaluation is a rigorous annual academic evaluation. This comprehensive report is the first evaluation of Arkansas public charter schools to provide year-by-year academic outcomes for the charter sector statewide and for individual charter schools.

As part of the contract with the Charter and Home Schools Office of the Arkansas Department of Education (ADE), researchers have been asked to study the academic effect of Arkansas charter schools of all types for three years (2011-12 to 2013-14). As a robustness check for the results of the 3-Year

Statewide Matching analysis, this report focuses only on analyses conducted using lottery and waitlist data available for 2012-13. These terms are described and the approach is further discussed in the Data and Methods section of this report.

Academic performance on the state standardized examinations is the outcome of interest in the analyses. These data are available across school types, both traditional public schools and public charter schools, and the tests were taken during the spring of the academic years considered.

### Literature Review<sup>45</sup>

This report considers those papers that have analyzed Arkansas charter schools in the past. These analyses come in two forms: those that reported Arkansas outcomes as a subset of a national analysis, and those that reported only Arkansas outcomes. The two national evaluations that have reported Arkansas outcomes as a subset were performed by the Center for Research on Education Outcomes (CREDO) at Stanford University. CREDO focuses on K-12 education reform research, providing analysis to school leaders and policymakers.<sup>46</sup> Separate groups did the evaluations limited just to Arkansas. Metis Associates, a consulting-research firm stationed in New York City, under contract with the state, performed one study.<sup>47</sup> Jonathan Mills in the Department of Education Reform at the University of Arkansas, did another study. Researchers at the University of Arkansas, Fayetteville also conducted the most recent study.

These studies represent the broad scope of studies that have looked at Arkansas charter schools. After giving a brief overview of each, a summary table of these evaluations is presented (Table 1), as well as an explanation of the distinction between previous evaluations and the current study.

### **Arkansas in the Context of National Evaluations**

#### ***CREDO Report, 2009***<sup>48</sup>

While CREDO performed a national evaluation of the charter school populations in 16 states with available data in 2009, the organization also released a separate analysis of Arkansas charter schools only. Using data from five separate years of schooling (2003-04 through 2007-08), the study team estimated the effect size of Arkansas charter schools on academic growth for their particular students.

CREDO used a Virtual Twin matching (VTM) method. The VTM approach seeks to create comparable groups of charter and TPS students by gathering a larger group of TPS students that, collectively, represents the balance of observable characteristics present in the charter student sample. The study sought to match 4,627 students enrolled in 24 different charter schools, averaging 925 students

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<sup>45</sup> Ritter, Gary et al. "2011-12 Arkansas Charter School Academic Evaluation". Office for Education Policy.

<sup>46</sup> "Overview." Center for Research on Education Outcomes (CREDO). Web. 15 August 2014.  
<<http://credo.stanford.edu/aboutOverview.html>>.

<sup>47</sup> "About Us: Our Company." Metis Associates. Web. 15 August 2014.  
<[http://metisassoc.com/about/our\\_company.html](http://metisassoc.com/about/our_company.html)>

<sup>48</sup> Raymond, Margaret, et al. "Multiple Choice: Charter School Performance in 16 States." Center for Research on Education Outcomes (CREDO) Report (2009). Web. 15 August 2014.  
<[http://credo.stanford.edu/reports/AR\\_CHARTER%20SCHOOL%20REPORT\\_CREDO\\_2009.pdf](http://credo.stanford.edu/reports/AR_CHARTER%20SCHOOL%20REPORT_CREDO_2009.pdf)>.

per year, to counterparts in the traditional public school sector. Of these students, 88% were matched in Literacy and 87% were matched in Math.

This analysis provided outcomes across several different comparisons: effect by simple enrollment, by years of enrollment, by race/ethnicity, by Free or Reduced Lunch status, by special education status, by English Language Learner status, by grade repeating status, and by starting test score deciles. The overall Arkansas charter effect, as reported by this CREDO evaluation, was +.02 standardized units in Literacy and +.05 standardized units in math. Both of these findings were statistically significant at the 95% confidence level, and the math finding was significant at the 99% level.

### ***CREDO Report, 2013***<sup>49</sup>

This 2013 report served as a follow-up to the 2009 CREDO study, evaluating the same states as previously, as well as new states that were available, with data that had been released since the 2009 report. In this report, Arkansas was the only state with high gains for charter school students relative to traditional public school students in the 2009 report, but negative for charters in the 2013 evaluation of Math and Literacy results.

Specifically, the second CREDO report focused on growth from the 2006-07 to the 2010-11 school year, the academic year prior to the focus of this report. Like the 2009 report, CREDO was able to match large numbers of the students, 89% in Literacy and 82% in Math, using the same “Virtual Twin” matching (VTM) method as before.

Of the matched students, the mean charter school student started .05 standardized units below the statewide average in Literacy and .09 standardized units below the statewide average in math. After the VTM analysis was done, the report showed that Arkansas charter students saw a -.03 standardized unit effect in both Math and Literacy. CREDO also converted this effect into days of learning, saying that this negative result for charter school students was equivalent to losing 22 days of school compared to their counterparts in traditional public schools. The CREDO evaluators noted that school closure rates had some effect on the findings overall, but perhaps less so for Arkansas. Some charter schools that were open for the 2010-11 school year had been closed by the beginning of the 2011-12 school year, and therefore not covered in this report.

### **Arkansas-Specific Evaluations**

#### ***Metis Report, 2012***<sup>50</sup>

Annual reports of the status of Arkansas schools have been commissioned going back to the 2005-06 school year. For the 2006-07 through 2010-11 school years, Metis Associates conducted this evaluation. For the 2010-11 analysis, which was published in 2012, Metis conducted surveys and

<sup>49</sup> Raymond, Margaret, et al. "National Charter School Study: 2013." Center for Research on Education Outcomes (CREDO) Report (2013). Web. 15 August 2014.

<<http://credo.stanford.edu/documents/NCSS%202013%20Final%20Draft.pdf>>.

<sup>50</sup> Lopez, Otoniel, et al. "Arkansas Public Charter Schools: Evaluation of Service Impact and Student Achievement." Metis Associates Report (May 2012). Web. 15 August 2014. <[http://www.arkansased.org/public/userfiles/Learning\\_Services/Charter%20and%20Home%20School/Charter%20School-Division%20of%20Learning%20Services/2010\\_2011\\_Charter\\_Schools\\_Evaluation\\_Report\\_FINAL\\_053012\\_3.pdf](http://www.arkansased.org/public/userfiles/Learning_Services/Charter%20and%20Home%20School/Charter%20School-Division%20of%20Learning%20Services/2010_2011_Charter_Schools_Evaluation_Report_FINAL_053012_3.pdf)>.

obtained information from 27 charter school administrators, 1,118 parents of charter students, and 5,948 charter students, seeking information on charter mission achievement, academic achievement, and parental satisfaction.

The survey focused on the areas of greatest emphasis for charter school administrators, who emphasized building academic leaders and strong curriculum programs. In addition, attention given to professional development increased in 2010-11 over previous results of the survey. Administrators further reported that the greatest concerns for their schools were the public views of the schools and the availability of public funds for building budgets. Finally, the levels of satisfaction of both parents and students were high, especially in those schools with high levels of parental participation. The Metis group also made suggestions as to the grade level practices that resulted in higher Benchmark examination scores. However, no conclusions were drawn on charter effectiveness.

***Mills Study, 2013***<sup>51</sup>

This evaluation considered the academic effect of open-enrollment charter schools in Arkansas on students using panel data from academic years 2002-03 to 2010-11. The author employed an individual fixed-effects research design, focusing on students who switched school sectors and then comparing their outcomes when in the charter sector with their outcomes when in the TPS sector. Using a robust data set with over 1.6 million traditional public school students and over 13,000 charter school students, the Mills study found small but statistically significant negative test score results for charter school students.

However, as other studies of charter schools have found, this evaluation reported that as an Arkansas charter school matures in age, these negative results decrease, reaching insignificant or positive significant results by the fourth year, in both Math and Literacy tests. This fourth-year effect could be caused by several different factors, including: 1) schools (administrators and teachers) are able to deliver a better product as they learn over the years; or 2) poor schools are closed, fail to keep running, or lose a critical mass of students after three relatively unsuccessful years.

While the author sought to compare findings with those using similar research methods in other states, he conceded that Arkansas is different not only in its rural composition but also in the comparatively restrictive laws that govern charter schools.

***University of Arkansas Report, 2015***<sup>52</sup>

This evaluation was contracted by the Arkansas Department of Education and studied the academic effect of all charter schools using a “matched twin” student matching method (similarly used in this current analysis and described in greater detail in the Methods section of this report). Gains were reported for three evaluation years: 2011-12, 2012-13, and 2013-14 along with average annual effects. Effects were reported for both Math and Literacy at several levels: all schools combined, only conversion charters, only open-enrollment charters, individual schools, and by subgroups. Subgroups included

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<sup>51</sup> Mills, Jonathan N. "The Achievement Effects of Arkansas Open-enrollment Charter Schools." *Journal of Education Finance* 38.4 (2013): 320-342.

<sup>52</sup> Ritter, Gary W., et al. "Arkansas Charter School Academic Evaluation: 3-Year Statewide Matching Study (2011-12 to 2013-14)". University of Arkansas, Submitted September 30, 2015.

maturity of school, defined as 5 years or older as of the 2011-12 school year, waitlist status, location (Little Rock metro v. other), and income level of students served (about state average < 61% FRL or ≥61% FRL).

The 3-Year Statewide Matching study found that, overall, charter schools (including open-enrollment and conversion schools) across the state had a statistically significant positive effect in Math Benchmark test scores, while the Literacy Benchmark effect was not statistically significant when combining all three years. In general, the positive effects of open-enrollment charter schools in both Benchmark exams were driven primarily by newer schools, schools with waitlists, schools in the Little Rock Metro area, and schools serving less well-off students (about state average ≥ 61% FRL).

**Table 1:** Previous Studies of Arkansas Charter School Academic Effects with Highlighted Outcomes

Study Name, Year	N of Charters (Students)	Years Reported	Methods	Overall Findings
CREDO, 2009	24 (4,627)	2003-08	Matched Twin Analysis	+0.02 Reading +0.05 Math
CREDO, 2013	31 (21,896)	2007-11	Matched Twin Analysis	-0.03 Reading, Math; -22 Days of Learning
Metis, 2012	29 (7,633)	2010-11	Stepwise Regression, Analysis of Covariance (ANCOVA)	No effectiveness conclusions reported
Mills, 2013	31 (13,255)	2001-11	Ordinary Least Squares Regression with Student Fixed Effects	-0.02 to -0.11 overall; Positive gains for school in 4 <sup>th</sup> + Year
UARK, 2015	41 (18,045)	2011-14	Matched Twin Analysis	-0.01 in Literacy; +0.03 in Math; -0.08 in Geometry EOC; +0.04 in 11 <sup>th</sup> Grade Literacy EOC, overall

### Distinctions of this Report

This report serves as a robustness check to the results of the 3-Year Statewide Matching analysis, which was the first set of unique findings on the academic effect of Arkansas charter schools for the 2011-12 to 2013-14 school years, with specific findings for each school, including both conversion and open-enrollment charters, in addition to results specific to Benchmark exams (3<sup>rd</sup> – 8<sup>th</sup> grade Literacy and Math) and EOC exams (11<sup>th</sup> Grade Literacy and Geometry). This report focuses only on analyses conducted using lottery and waitlist data available for 2012-13, with academic effects estimated for charter schools within the geographic area of the oversubscribed open-enrollment charters specific to Benchmark exams (4<sup>th</sup> – 8<sup>th</sup> grade Literacy and Math), EOC exam results are not included in this study.

In the open-enrollment schools that hold lotteries, a comparison could be made between students who were randomly admitted to the school to students who were randomly not admitted to the school. This method, a Randomized Control Trial (RCT), is considered the “gold standard” and the most rigorous research design for evaluating a program. This method is particularly strong because it allows for a comparison of students whose average difference in performance across the treatment and control groups

should be attributed to the effect of attending a charter school, not differences in parent motivation that drove them to seek charter schooling, thus reducing biases based on selection.

Unfortunately, upon receiving the lottery data the oversubscribed public charter schools in Arkansas, we realized that a limited number of “seats”, even in oversubscribed schools, were allocated based on the lottery. This is due to the fact that, in most cases, once students enter charter schools, they remain in the schools and are thus given a spot in the subsequent school years. In practice, this means that in K-12 charter schools such as eStem or KIPP, most of the “lotteried” spots are in Kindergarten where students “enter” the school. In other charter middle schools, such as LISA, the lottery and waitlist is relevant in the “entry” grade 6, but then becomes less meaningful in later grades. Moreover, in the grades where lotteries were relevant, schools were not required to keep the specific data (such as which admitted students came in via lottery versus the waitlist or which students were offered seats but declined) that would aid in the conduct of an RCT study of charter school effectiveness.

Therefore, the “matched twin” 3-Year Statewide Matching study was the primary assessment of charter school effectiveness and this Lottery Waitlist-Matching study as a robustness check on those results.

The overall study matches or exceeds the rigor of the methods used in previous studies. This report uses a subset of charter schools with a smaller number of students overall than the “matched twin” 3-Year Statewide Matching study. The main difference of this Lottery Waitlist-Matching report is a result of the limited scope of this report as compared to the others cited, as student matches could only be obtained from charter schools within the geographic area of the oversubscribed schools.

## Data

For this analysis, the research team was provided non-identifying student level data for the state of Arkansas, from 2008-09 to 2013-14. Non-identifying, in this context, means that no student identifying information was used except for a unique but anonymous ID generated by the ADE. Each ID was paired with information for each school year including the school attended, Free and Reduced Lunch (FRL) status, race/ethnicity, gender, English Language Learner (ELL) status, Individual Education Plan (IEP) status, and test scores for Math and Literacy. Use of data complied with Federal Education Rights and Privacy Act (FERPA) regulations and relevant Arkansas regulations.

The student test scores came from four separate Arkansas standardized tests: the Arkansas Comprehensive Testing, Assessment and Accountability Program (ACTAAP, more commonly known as the Benchmark examination) in both Math and Literacy, and the End of Course (EOC) examinations in 11<sup>th</sup> Grade Literacy and Geometry. Benchmark tests are taken by 3<sup>rd</sup> through 8<sup>th</sup> grade students and serve as Arkansas’s compliance under the Elementary and Secondary Education Act (ESEA) and No Child Left Behind Act (NCLB).<sup>53</sup> EOC tests provide summative examinations for Algebra, Geometry, Biology, and

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<sup>53</sup> ACTAAP. Arkansas Department of Education, n.d. Web. 13 August 2014.  
<<http://www.arkansased.org/divisions/learning-services/student-assessment/actaap>>.

11<sup>th</sup> Grade Literacy classes. For this current analysis, Math and Literacy Benchmark scores were used, EOC scores were not.

As noted in Table 2, charter students represented 2.4% of all Arkansas K-12 students in 2012-13 and 3.5% in 2013-14. Charter students’ share of total enrollment has increased over the two years covered by this report. While the subpopulation of charter students differs in some observable ways from the state as a whole in that it includes a smaller proportion of low income students but a larger proportion of minority students, the charter schools included in this current analysis have greater proportions of low income and minority students than the subpopulations of all open-enrollment charters, all charters, and students statewide.

**Table 2.** Student Demographics: Charter Students in Waitlist-Matching Analysis Compared to Open-enrollment Students, All Charter Students, and State, 2012-13 to 2013-14

	<b>Charter School Students in Waitlist-Matching (12-13)</b>	<b>Open-enrollment Charter Students (12-13)</b>	<b>All Charter Students (12-13)</b>	<b>State (All Students 12-13)</b>	<b>Charter School Students in Waitlist-Matching (13-14)</b>	<b>Open-enrollment Charter Students (13-14)</b>	<b>All Charter Students (13-14)</b>	<b>State (All Students 13-14)</b>
Enrollment	3,999	7,402	12,565	471,867	4,163	8,346	16,568	474,995
Charter as % Total	0.9%	1.6%	2.7%		0.9%	1.8%	3.5%	
FRL %	82%	52%	61%	61%	76%	51%	73%	61%
Minority %	85%	60%	59%	36%	99%	57%	57%	37%

Table 3 shows some of the basic details for the included open-enrollment charter schools, including the year the school opened and the grade levels served during the school years covered in this report. Appendix A expands on these school characteristics, showcasing the enrollment of each charter school, the percentage of students who are a minority race/ethnicity, and the percentage of students who participate in the Free or Reduced Lunch (FRL) program.

**Table 3.** Included Open-enrollment Charter Schools, 2011-12 to 2013-14

<b>Charter School</b>	<b>Year Opened</b>	<b>Grades Served in 11-12</b>	<b>Grades Served in 12-13</b>	<b>Grades Served in 13-14</b>
Academics Plus	2001	K-12	K-12	K-12
Covenant Keepers	2008	6-11	6-12	6-8
eStem Elementary*	2008	K-4	K-4	K-4
eStem Middle School*	2008	5-8	5-8	5-8
Jacksonville Lighthouse	2009	K-8	K-9	K-10
KIPP Blytheville	2010	5-6	4-7	4-8
KIPP Delta	2002	K-3, 5-12	K-12	K-12
LISA Academy	2004	6-12	6-12	6-12
LISA Academy North Little Rock	2008	K-11	K-12	K-12
Little Rock Preparatory Academy	2009	K-7	K-8	K-8

\* eStem combined to one school in 3-Year Statewide Matching analysis

Open-enrollment charter schools function as their own school districts. Some charter schools are stand-alone organizations, and the school also serves as the entire district (e.g., Imboden Area Charter School is the school name and the name of the school district). Other times, one set of schools can be chartered separately, so that the elementary, middle, and high school have separate charters. For example, eStem Elementary, Middle, and High Schools were three separate charters and thus operated as three separate districts until these three charters merged into one school district unit beginning in the 2013-14 academic year. The opposite of stand-alone charters are those created by Charter Management Organizations (CMOs) that control many different schools, sometimes around the country. A CMO's charter school network can operate under one charter (e.g., KIPP Delta Public Schools has one charter with schools in Helena/W. Helena, Blytheville, and Forrest City<sup>54</sup>) or under multiple charters (e.g., Lighthouse Academies operates schools in Jacksonville, Pine Bluff, and North Little Rock under different charters<sup>55</sup>).

## Methods

### **Lottery Analysis**

In the analysis to determine the effect of attending a charter school, the fact that open-enrollment charter schools are required to hold lotteries if more students apply to attend than there are spots available is used. In the open-enrollment schools that hold lotteries (“oversubscribed schools”), due to the lotteries, it would be possible to compare students who were randomly admitted to the school to students who were randomly not admitted to the school. With this method a Randomized Control Trial (RCT) can be used, which is the most rigorous research design for evaluating a program. The random-assignment method seeks to examine the effect of attending a charter school on student performance on Literacy and Math benchmark assessments. This method is particularly strong because it allows for a comparison of students who all are invested in attending a charter school (by applying to the school). Therefore, the differences between students' performances should be attributed to the effect of attending a charter school not on differences in parent motivation, or other possible means of selection bias.

Only schools that reported waitlists were included in the analysis. It is possible that some schools have a waitlist but did not report it, in which case they were classified as “no waitlist reported”<sup>56</sup>. It is also possible that a school used a lottery admission process but, upon enrolling students, had no waitlist because various parents who received admissions declined to enroll, and all of the waitlisted students eventually were admitted to the school. A summary of how schools are classified for this waitlist analysis is found in Appendix B of this report.

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<sup>54</sup> *Our Schools*. KIPP: Delta Public Schools, n.d. Web. 18 August 2014. <[http://www.arkansased.gov/contact-us/charter-schools/charter\\_school\\_categories/open-enrollment](http://www.arkansased.gov/contact-us/charter-schools/charter_school_categories/open-enrollment)>.

<sup>55</sup> *Our Schools*. Lighthouse Academies, n.d. Web. 18 August 2014. <<http://www.lighthouse-academies.org/schools#dropdown-arkansas>>.

<sup>56</sup> Schools notified the Arkansas Department of Education if they had a waitlist, but there was no verification of whether the others actually had no lottery, so they are listed as “unreported.” (See Appendix B.)

In the 2012-13 school year, waitlisted student data for seven oversubscribed schools was provided. In all schools where lotteries occurred, these students were included in the analysis<sup>57</sup>. However, not all grades in each school were oversubscribed and some oversubscribed grades had very few, if any, lottery “winners”. For example, in a K-12 school such as eStem, most of the “lotteried” seats are in Kindergarten; most seats in other grades are generally taken by students in the system moving naturally from one grade to the next. Thus, there would be far fewer “lottery” students to study than the total number of students in the school. A list of schools and grades included in the lottery analysis can be found in Appendix B.

### *Limitations*

A lack of specificity in the lottery data prevented us from performing this analysis as a Randomized Control Trial. Given that the state law does not require or provide specific documentation guidelines for lottery results, the data received for 2012-13 and 2013-14 were not collected in a comprehensive and systematic way. For example, it was not clear how the lottery conducted for each school generated the list of admitted and waitlisted students. Also there was no way to be sure that the waitlist information was complete, as only waitlisted students with previous public school enrollment were able to be included (any or all out of state, private school, or home school applicants may not have been reported). Additionally, there was no information on whether students admitted were awarded automatic admission outside of the lottery and the reasons for that (such as a sibling preference or mid-year transfer).

This problem could be remedied, and a “gold standard” rigorous experimental analysis could be conducted, if:

1. Charter schools that held lotteries established exact and complete groups of “admitted by lottery” and “not admitted by lottery” students, and provided those lists to us in the form in which they existed when the lottery took place;
2. Charter schools that held lotteries and generated a randomly-ordered waiting list, and then admitted students in order off of that list, provided us with the original waitlist and indicated the last student who was offered admission off of the list along with the outcome of the offer (accepted or declined);
3. Charter schools indicated any students who were awarded automatic admission outside of the lottery and the reasons for that (such as a sibling preference or mid-year transfer).

These approaches would allow us to more clearly and completely determine which students were offered admission and which students were not offered admission through the lottery, which is the foundation of a rigorous experimental analysis.<sup>58</sup>

We are not claiming that the charter lotteries in Arkansas have been administered improperly. The incomplete records documenting the results of those lotteries simply lack the detail necessary for researchers to draw upon them to conduct a random assignment analysis of charter school effects.

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<sup>57</sup> If the sample size for any particular analysis was less than 10, those grades and schools were omitted.

<sup>58</sup> Nevertheless, even if it were possible to do this in the future, it should be noted that it would still only be possible to study a very small subsample of all charter students because most charter students in multi-grade schools have been admitted in a prior year and have continued enrollment in the school through natural grade promotions.

## Lottery Waitlist-Matching Analysis

As an alternative means of analysis to determine the effect of attending a charter school, the lottery waitlist information provided is used to compare students who were not randomly admitted to the school to all students attending the school, and other charter schools within the same geographic area. As oversubscribed schools are concentrated in one geographic area, we include all charter school students within that area in the pool for potential matches. In this study, all charter students within the geographic area of the oversubscribed charters are matched to peers who were not accepted in lotteries and thus remained on a waitlist. A “matched twin” student matching method identical to the method used in the 3-Year Statewide Matching analysis is used to allow for the best possible comparison using all students in these charter schools and all waitlisted students. The key difference is that, in this study, the population from which the matched twins are selected is drawn entirely from the charter school waitlists rather than being drawn from the full population of Arkansas students. So instead of charter school students being matched to students from TPS feeder schools, they are matched to students who all applied to charter schools but did not receive admission and were waitlisted.

The goal of the student match method is to create a set of students who are in traditional public schools (waitlisted students) but are essentially the same as the group of public charter school students when comparing observable characteristics such as income and race/ethnicity. In creating these matches and comparing student achievement, this method allows for comparison of students who all are similarly invested in attending a charter school (as evidenced by applying to the school). Since all students in the study sought charter schooling, selection bias concerns are addressed as the differences between students’ performances for the charter school and waitlisted samples can be attributed to the effect of attending a charter school and not on differences in parent motivation. Moreover, any differences will not be based on observable student characteristics (such as race, income, gender, or prior test scores) as matched twins will be intentionally selected to be nearly identical on these characteristics. The remainder of this report references this lottery waitlist-matching analysis (referred to as the Waitlist-Matching analysis).

In order to complete the matching process for charter students within the geographic area of the oversubscribed charters, students who have received the “treatment” of being in the charter school are matched on observable characteristics from the previous school year, so that the academic growth they experience in 2012-13 can be properly studied. For those students who are not promoted from one grade to the next, accommodations are made to match properly, as described in step 1 below. Treatment students are matched with waitlisted students in traditional public schools using the following matching procedure (fully outlined in Appendix C). This process is identical to the one used in the earlier 3-Year Statewide Matching study and outlined on page 22 of that report:

### **Benchmark Matching Process (Conducted Separately for Math and Literacy)**

1. Students are first matched with a student in the same grade in both the outcome year and baseline or matching year (generally the year before).
2. For the Math and Literacy analyses, separately, all students are matched based on previous year scores on the same subject test, rounded to the nearest 0.01 z-score unit. The other subject test score is used as part of the propensity score in step 4, as having a matched test score in the same subject is more relevant for controlling for prior performance. Therefore,

- the Math analysis matches first on Math examination scores and later factors in Literacy scores, while the Literacy analysis matches first on Literacy examination scores and later factors in Math scores.
3. A propensity score is a single metric created using FRL status, race/ethnicity (African-American, Asian-American or Pacific Islander, Hispanic-American, Native American, White, or “Two or more races”), gender, and the “other” test score (Literacy for the Math analysis and Math for the Literacy analysis). It is used to estimate the probability of a student receiving the intervention of interest.
  4. Finally, all matches are based on guaranteeing exact matches from step 1 and 2, and the closest available propensity score match from step 3.

In order to test whether or not this process worked for the purposes of generating an appropriate comparison group, baseline equivalency analyses were conducted to show how similar the two groups are to each other. The average measure of each of the observable variables is reported for both the charter “treatment” group and for the matched student comparison group. Any difference between the two is reported, and the statistical p-value is reported to show if that difference is statistically significant. P-values below 0.05 indicate statistically significant differences that might raise concerns about the comparability of the samples. For the major comparisons, shown in Tables 4 and 5, in some instances broader matches<sup>59</sup> were needed in order to capture a large enough sample size for the analysis. For this reason, in all cases, and especially in cases where there are significant differences at baseline, greater confidence should be placed in the regression results which include only the matched sample but further control for any differences in baseline observable characteristics in the comparison.

Tables 4 and 5 show the Math and Literacy baselines, respectively, for all included charter schools administering Benchmark exams, for each included year. The overall equivalency is made by aggregating all charter students with their student matches to create one large database for analysis. For the combined set of matches for all included charter schools, there were some significant differences in the percent of FRL students, minority students, and female students on the Math Benchmark assessment. In 20 total comparisons of baseline characteristics for which the two samples might differ (five characteristics in each of four years), statistically significant differences were detected for 12 of them, so greater confidence should be placed in the regression results which include only the matched sample but control for baseline observable characteristics as well. For further detail on baseline equivalency, see Appendix D, which includes school-level baseline equivalency tables.

These summary statistics show that it was not possible to perfectly match the samples and that charter students were slightly more likely to be economically disadvantaged and to come from minority backgrounds, despite the fact that prior test scores are identical. This is due to the fact that the *primary* matching indicator was prior year academic ability. In any event, these minor differences will be statistically controlled for in the regression analyses, in which academic growth is modeled controlling for all of these demographic characteristics.

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<sup>59</sup> Broader matches were accomplished by relaxing the degree of similarity of the baseline test score for the two students.

**Table 4.** Baseline Equivalency for Benchmark Analysis in **Math, All Included Charter Schools, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	1055	1055	-	1108	1108	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	-0.18	-0.18	(0.00)	-0.10	-0.10	(0.00)
<b>Prior Year Literacy Z-Score</b>	0.00	-0.04	0.04	0.00	-0.01	0.01
<b>% FRL</b>	0.71	0.58	0.13 ***	0.80	0.59	0.21 ***
<b>% Minority</b>	0.76	0.68	0.08 ***	0.84	0.70	0.14 ***
<b>% Female</b>	0.49	0.55	(0.06) ***	0.46	0.51	(0.05) ***

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table 5.** Baseline Equivalency for Benchmark Analysis in **Literacy, All Included Charter Schools, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	1145	1145	-	1188	1188	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	-1.00	-0.16	(0.84) *	-0.19	-0.08	(0.11) ***
<b>Prior Year Literacy Z-Score</b>	0.01	0.01	-	0.01	0.01	(0.00)
<b>% FRL</b>	0.73	0.59	0.14 ***	0.82	0.60	0.22 ***
<b>% Minority</b>	0.77	0.67	0.09 ***	0.85	0.71	0.14 ***
<b>% Female</b>	0.49	0.52	(0.03)	0.49	0.51	(0.02)

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Once the baseline equivalency is examined, the resulting matches can be run through statistical testing to see how much of the academic growth for students can be attributed to attending individual charter schools, specific types of charter schools, or all charter schools combined. The analytic method of choice presented is Ordinary Least Squares regression analysis.

## Results

In this section, the results of the evaluation are presented for all included schools, schools by charter network, and schools by location. For comparison, results from the current study are reported alongside the results of the 3-Year Statewide Matching evaluation. Throughout, certain qualifications and explanations are provided to properly frame these results.

First, this report describes the size of the sample being analyzed as compared to the total number of students that attend the charter schools being analyzed, and more importantly, to the number of students in the included grades in those schools. Tables 6 and 7 show the enrollment in all the included charter schools in the Math Benchmark and Literacy Benchmark analyses, respectively. While the number of students in the included charter schools differed annually, approximately 4,000 charter school students attended schools that were included in the Benchmark analyses in any given year. Of these, about 2,700 to 2,900 were actually in grades 4-8 and were eligible for matching. Of these, about 38% to 41% were actually included in any given analysis.

The main reason for this sample limitation is the matching requirements. Each student in the study must have test scores from both the baseline test year and the outcome year. Reasons for a specific student not being included in the analysis include, but are not limited to: being in an untested grade in either the baseline or outcome year, not being enrolled in an Arkansas public school during either year, being in a school that was unable to report student level test information due to low enrollment, or missing the test day, among other reasons. Given these reasons, the results should be interpreted as the effects for the matched student population, which may not generalize to the broader student population.

The academic effects represented in Tables 6 and 7 indicate that the Arkansas public charter schools included in the Waitlist-Matching analysis demonstrated a positive effect (0.08 standardized units) on Math Benchmark scores in 2012-13 but had no clear effect on Math scores in 2013-14 or Literacy Benchmark scores in either year. The math treatment coefficient for 2012-13 of 0.0869 indicates nearly a 9% of a standardized unit increase in student test scores from a year of charter schooling, holding all other covariates in the regression model constant. Effects appear to be similar to those found in the 3-Year Statewide Matching analysis for all open-enrollment charter schools. For full regression results see Appendix E.

**Table 6. Academic Effect of All Included Charter Schools in Math Benchmarks, 2012-14**

<b>Math Benchmark</b>						
<b>Year</b>	<b>Enrollment in Included Schools</b>	<b>Enrollment in Incl. Schools and Grades</b>	<b>% Enrollment in Included Schools and Grades</b>	<b>Sample Size (Charter Only)</b>	<b>Treatment Coefficient</b>	<b>Sig. Level</b>
2012-13	3,999	2,776	38%	1,055	<b>0.0869</b>	<b>***</b>
2013-14	4,163	2,899	38%	1,108	<b>0.0260</b>	

*\*p<0.10, \*\*p<0.05, \*\*\*p<0.01*

**Table 7. Academic Effect of All Included Charter Schools in Literacy Benchmarks, 2012-14**

<b>Literacy Benchmark</b>						
<b>Year</b>	<b>Enrollment in Included Schools</b>	<b>Enrollment in Incl. Schools and Grades</b>	<b>% Enrollment in Included Schools and Grades</b>	<b>Sample Size (Charter Only)</b>	<b>Treatment Coefficient</b>	<b>Sig. Level</b>
2012-13	3,999	2,776	41%	1,145	<b>0.0191</b>	
2013-14	4,163	2,899	41%	1,188	<b>-0.0118</b>	

*\*p<0.10, \*\*p<0.05, \*\*\*p<0.01*

Comparing the results of the current analysis to those of the 3-Year Statewide Matching study, Tables 8 and 9 summarize results by school for Math and Literacy for both years included in both analyses.



**Table 8.** Comparison Summary of Results in **Math Benchmarks**, 2012-14

<b>Charter School</b>	Waitlist-Matching Academic Effect, 12-13	<i>Academic Effect 3-Year Statewide Matching Study</i>	Waitlist-Matching Academic Effect, 13-14	<i>Academic Effect 3-Year Statewide Matching Study</i>
<b>Overall LR Charter Effect</b>	<b>0.087***</b>	<b>0.086***</b>	<b>0.026</b>	<b>0.039**</b>
Academics Plus	-0.018	0.047	0.105	-0.019
Covenant Keepers	-0.061	0.054	-0.081	-0.144**
eStem Elementary <sup>^</sup>	0.392***	0.086** <sup>^</sup>	0.258***	0.098** <sup>^</sup>
eStem Middle School <sup>^</sup>	-0.016	<sup>^</sup>	0.043	<sup>^</sup>
Jacksonville Lighthouse	0.089*	0.140***	-0.002	0.099***
KIPP Blytheville	0.177	0.113*	0.181	0.134**
KIPP Delta	0.213**	0.142**	-0.083	-0.138***
LISA Academy	-0.018	-0.003	0.011	0.051
LISA Academy North Little Rock	-0.010	0.169***	-0.036	0.019
Little Rock Preparatory Academy	0.141*	0.142**	-0.039	-0.055

Notes: \*\*\* $p < 0.01$ , \*\* $p < 0.05$ ,  $p < 0.1$ ;

<sup>^</sup>eStem Elementary and Middle were combined in the 3-Year Statewide Matching Analysis

**Table 9.** Comparison Summary of Results in **Literacy Benchmarks**, 2012-14

<b>Charter School</b>	Waitlist-Matching Academic Effect, 12-13	<i>Academic Effect 3-Year Statewide Matching Study</i>	Waitlist-Matching Academic Effect, 13-14	<i>Academic Effect 3-Year Statewide Matching Study</i>
<b>Overall LR Charter Effect</b>	<b>0.019</b>	<b>0.057***</b>	<b>-0.012</b>	<b>0.006</b>
Academics Plus	0.017	0.041	-0.002	0.041
Covenant Keepers	-0.025	0.109	-0.013	0.135*
eStem Elementary <sup>^</sup>	-0.001	0.043 <sup>^</sup>	-0.148	0.048 <sup>^</sup>
eStem Middle School <sup>^</sup>	0.078*	<sup>^</sup>	0.129**	<sup>^</sup>
Jacksonville Lighthouse	0.026	0.126***	-0.093*	0.029
KIPP Blytheville	0.123	0.236***	0.247*	0.063
KIPP Delta	0.078	0.104*	0.188*	0.247***
LISA Academy	0.192***	0.059	-0.012	-0.072**
LISA Academy North Little Rock	-0.221***	-0.012	-0.0283	-0.099*
Little Rock Preparatory Academy	0.011	0.049	-0.067	-0.019

Notes: \*\*\* $p < 0.01$ , \*\* $p < 0.05$ ,  $p < 0.1$ ;

<sup>^</sup>eStem Elementary and Middle were combined in the 3-Year Statewide Matching Analysis

*Subgroup Analyses*

In addition to the overall results for all included charter schools, additional analyses were conducted to compare charter networks and charter schools by location (Little Rock metro v. other). Findings are reported in comparison with results of the 3-Year Statewide Matching. In the tables and discussion that follow, the 3-Year Statewide Matching is referred to as the TPS Matching.

*Charter Networks:*

Schools that are part of a charter network could be expected to perform differently than stand-alone charters, as the networks provide a specific curriculum focus or target specific populations. Tables 10-12 present the Benchmark results for schools from the three largest charter networks in the state.

For the eStem charter school network’s results (Table 10), the annual effect for Literacy was null for matched groups in both analyses in 2012-13, but positive and significant (0.11 standardized units) for the matched students in the Waitlist-Matching analysis in 2013-14, while results for the TPS-matched students (in the 3-Year Statewide Matching analysis) were null for that year. The annual effect for math for the Waitlist-Matched students was null, but positive and significant (about 0.09 standardized units) for the TPS-matched students in both years. Taken separately, eStem Elementary School showed significant positive effects for both years in Math while eStem Middle School showed significant positive effects on Literacy (see Appendix F). It should be noted that differences in the results between the two analyses could be due to the different matches and/or the number of students in the samples.

**Table 10.** Academic Effects for eStem Charter Schools, 2012-14

	2012-13		2013-14	
	Waitlist Matching	TPS Matching	Waitlist Matching	TPS Matching
Reading	0.04	0.04	0.11 **	0.05
Math	0.06	0.09 **	0.01	0.10 **
<i>Reading n=</i>	<i>818</i>	<i>1,078</i>	<i>802</i>	<i>1,054</i>
<i>Math n=</i>	<i>762</i>	<i>1,104</i>	<i>714</i>	<i>1,060</i>

*Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1*

*Additional note: TPS Matching refers to students matched in the 3-Year Statewide Matching analysis.*

For the KIPP charter school network’s combined results, which include academic effects for both the Blytheville and Helena campuses (Table 11), the annual effect for Literacy was positive and significant for 2013-14 and the annual effect for Math was positive and significant for 2012-13. Taken separately, both KIPP schools showed somewhat significant positive effects for Literacy in 2013-14 and KIPP Helena showed significant positive effects in Math in 2012-13 (see Appendix F).

**Table 11.** Academic Effects for **KIPP Charter Schools**, 2012-14

**ALL KIPP**

	2012-13		2013-14	
	Waitlist Matching	TPS Matching	Waitlist Matching	TPS Matching
Literacy	0.04	0.06 **	Literacy	0.26 *** 0.07
Math	0.19 **	0.04	Math	-0.04 0.01
<i>Literacy n=</i>	202	368	<i>Literacy n=</i>	170 323
<i>Math n=</i>	158	383	<i>Math n=</i>	178 364

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Additional note: TPS Matching refers to students matched in the 3-Year Statewide Matching analysis.

For the LISA Academies’ results (Table 12), the annual effects for Literacy and Math were null for both years. Taken separately, both LISA schools showed significant effects for Literacy in 2012-13, however, LISA Academy (West) showed positive effects and LISA Academy - North Little Rock showed negative effects. Both schools showed null effects for Literacy and Math in 2013-14 (see Appendix F).

**Table 12.** Academic Effects for **LISA Academies**, 2012-14

**ALL LISA**

	2012-13		2013-14	
	Waitlist Matching	TPS Matching	Waitlist Matching	TPS Matching
Literacy	0.06	-0.01	Literacy	-0.03 -0.02
Math	-0.02	0.01	Math	0.02 0.03
<i>Literacy n=</i>	724	613	<i>Literacy n=</i>	840 567
<i>Math n=</i>	630	546	<i>Math n=</i>	732 536

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Additional note: TPS Matching refers to students matched in the 3-Year Statewide Matching analysis.

These results indicate that findings of the Waitlist-Matching analysis are consistent with the findings of the 3-Year Statewide Matching study. While there are small differences in the findings, these differences could be attributed to the different students that were matched in each analysis (charter matched to waitlist versus charter matched to TPS feeder students).

By Location (Little Rock Metro<sup>60</sup> v. Other<sup>61</sup>):

Further, it is expected that the effects on test scores will differ by the location of the school, which can also be related to school competition in the area. For this reason, the Benchmark results for the oversubscribed open-enrollment schools in the Little Rock Metropolitan area (including nearby towns that are within 30 miles of Little Rock) were analyzed separately from those in other areas. See Appendix A for a list of included charter schools by location.

<sup>60</sup> Little Rock Metro charter schools include those serving the Little Rock, N. Little Rock, Jacksonville, and Maumelle areas.

<sup>61</sup> The “Other” oversubscribed charter schools in the analysis are the KIPP charter schools.

For the Little Rock Metro schools’ results (Table 13), the annual effect for Literacy was null for the waitlist-matched students for both years and the TPS-matched students in 2013-14, but positive and significant (0.06 standardized units) for the TPS-matched students in 2012-13. The annual effect for Math was positive and significant (about 0.08 standardized units) for both matched groups of students in 2012-13, but was null for the waitlist-matched students in 2013-14 and positive and significant (0.04 standardized units) for the TPS-matched students in that year. It appears there are three schools (eStem Elementary, Little Rock Preparatory Academy, and Jacksonville Lighthouse) driving the positive Math effects found in 2012-13 (see Appendix F).

**Table 13. Academic Effects by Location, Little Rock Metro, 2012-14**

	2012-13		2013-14		
	Waitlist Matching	TPS Matching	Waitlist Matching	TPS Matching	
Reading	0.01	0.06 ***	Reading	-0.03	0.01
Math	0.08 ***	0.09 ***	Math	0.01	0.04 **
Reading n=	1,856	3,734	Reading n=	1,898	3,916
Math n=	1,728	3,774	Math n=	1,740	4,028

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Additional note: TPS Matching refers to students matched in the 3-Year Statewide Matching analysis.

For the non-Little Rock Metro schools’ results (Table 12), the annual effect for Literacy was positive and significant for 2013-14 and the annual effect for Math was positive and significant for 2012-13. These non-Little Rock schools are the KIPP schools, so these results are consistent with those in Table 11.

For academic effect comparisons by charter school see Appendix F.

## Conclusion

This evaluation complements the exhaustive overview of the academic effects of the 3-Year Statewide Matching study of Arkansas charter schools for the 2011-12 to 2013-14 school years. Due to insufficient specificity in lottery data made available to us, we were not able to analyze the effect of oversubscribed open-enrollment charter schools through a Randomized Control Trial (RCT). A student matching method, identical to the one used in the 3-Year Statewide Matching study, in which charter students in each school were matched with similar traditional public school students who applied for charter schools but were not admitted (waitlisted) in the 2012-13 school year, was used to create approximately equivalent comparison groups. Separate matches and analyses were conducted for Math and Literacy Benchmark assessments (outcomes in grades 4-8). Given the data available, this quasi-experimental model is the best form of analysis on the charter students in the sample, since the waitlisted students with whom they are compared similarly were motivated to seek charter school admission. Thus, the primary self-selection threat to the validity of the study – that there are pre-existing differences in motivation between charter attendees and the comparison group – is not present in this design. This report serves as a robustness check to the larger study and presents two years of academic effects for comparison.

Comparisons of the important features of the charter student and “matched twin” groups suggest that for the combined set of matches for all included charter schools, there were some significant differences in the percent of FRL students, minority students, and female students on the Math Benchmark assessment. The use of linear regression to control for the influence of these characteristics produced estimates of the differential effects of charter schooling on student test scores, compared with similar looking peers in traditional public schools who applied to charter schools but were not admitted (waitlisted).

The 3-Year Statewide Matching study found that, overall, charter schools (including open-enrollment and conversion schools) across the state had a statistically significant positive effect in Math Benchmark test scores, while the Literacy Benchmark effect was not statistically significant when combining all three years. In general, the positive effects of open-enrollment charter schools in both Benchmark exams were driven primarily by newer schools, schools with waitlists, schools in the Little Rock Metro area, and schools serving less well-off students ( $\geq$  State Average of about 61% FRL).

Results from this current analysis found statistically significant positive effects of open-enrollment Arkansas public charter schools in Math Benchmark test scores and null effects in Literacy Benchmark test scores for 2012-13. Null effects were found for both subject Benchmark exams in 2013-14. These findings appear to support the results of the 3-Year Statewide Matching evaluation. In general, the KIPP charter schools, outside the Little Rock Metro area, tend to perform better in Math than other schools within Little Rock. However, the performance of charter networks appears to differ among the schools within networks. Differences in results between the two matched groups, those in the Waitlist-Matching analysis (charter-waitlist matches) and those in the 3-Year Statewide Matching analysis (charter-TPS matches), could be attributed to the different student matches and the number of students in the samples.

Reasonable conclusions that can be drawn from this study are that the oversubscribed public charter schools in Arkansas have their clearest positive effect on student test scores in Math, however, this finding is not consistent over both years of analysis. The school year 2012-13 appeared to be the strongest individual year for charter school performance, compared with 2013-14. Furthermore, the oversubscription of schools found in the Little Rock metro area indicate greater demand for charter school seats there.

This evaluation has certain limitations. First, the "gold standard" experimental design strategy could not be used because of differences in the types and amount of data collected from charter schools about their admissions lotteries. A quasi-experimental study design was implemented instead. A second limitation of this study was the small sample of oversubscribed schools and the relatively low student match rates. Most oversubscribed charters are found within the Little Rock metro area. Several charter schools, by design or for other reasons, maintain low student populations and, therefore, have low numbers of students tested.

Researchers should continue to analyze the academic effects of Arkansas public charter schools. One of the most celebrated aspects of charter schools is that they are held accountable for outcomes. This current evaluation adds to that accountability and provides a means of checking the robustness of results

found in the previous 3-Year Statewide Matching analysis. While academic effects do not encompass the entire mission of a charter school, or any school, these results help to inform the public regarding the performance of Arkansas public charter schools.

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**Appendix A: Demographics of Included Arkansas Charter Schools**

**Table A1.** Demographics of Included Arkansas Charter Schools (3-Year Average, 2011-14)

<b>Charter School</b>	<b>Enrollment</b>	<b>FRL %</b>	<b>Minority %</b>
Academics Plus	640	27%	26%
Covenant Keepers	218	86%	99%
eStem (All)	1,468	33%	59%
Jacksonville Lighthouse	711	61%	63%
KIPP Blytheville	208	80%	89%
KIPP Helena	858	86%	65%
LISA Academy (Main)	730	36%	72%
LISA Academy North Little Rock	514	35%	51%
Little Rock Preparatory Academy	180	78%	99%

**Table A2:** List of Included Open-enrollment Charter Schools by Location, 2011-14

<b>School</b>	<b>Year Opened</b>	<b>Location</b>	<b>Little Rock Metro</b>
Academics Plus	2001	Maumelle	Yes
Covenant Keepers	2008	Little Rock	Yes
eSTEM*	2008	Little Rock	Yes
Jacksonville Lighthouse	2009	Jacksonville	Yes
KIPP Blytheville	2010	Blytheville	No
KIPP Delta	2002	Helena/W. Helena	No
LISA Academy	2004	Little Rock	Yes
LISA Academy North Little Rock	2008	N. Little Rock	Yes
Little Rock Preparatory Academy	2009	Little Rock	Yes

\*eSTEM combined to one school for analysis purposes

**Appendix B: 2012-13 Open-enrollment Charter Schools with Waitlists (Lotteries)**

**Table B1.** List of Charter Schools by Waitlist, 2012-13\*

<b>Charter School</b>	<b>Year Opened</b>	<b>Waitlist 12-13</b>
Academics Plus	2001	Yes
Arkansas Virtual Academy	2007	Unreported
Benton County School of the Arts	2001	Unreported
Covenant Keepers	2008	Unreported
Dreamland Academy	2007	N/A
eStem Elementary	2008	Yes
eStem High School	2008	Yes
eStem Middle School	2008	Yes
Haas Hall Academy	2004	Unreported
Imboden Area Charter School	2002	Unreported
Jacksonville Lighthouse	2009	Unreported
KIPP Blytheville	2010	Yes
KIPP Delta	2002	Yes
LISA Academy	2004	Yes
LISA Academy North Little Rock	2008	Yes
Little Rock Preparatory Academy	2009	Yes
Northwest Arkansas Classical Academy	2013	N/A
Pine Bluff Lighthouse Academy	2011	Unreported
Premier High School of Little Rock	2013	N/A
Quest Middle School of Pine Bluff	2013	N/A
SIA Tech	2011	Unreported

\*Because of the limitations of information on waitlists, it is difficult to say if a school truly had no waitlist. For those who have no waitlist, their status is “Unreported,” which could mean there is no waitlist, or that the school is full and no waitlist was reported. No District Conversion schools were included as having a waitlist, even if there was a waitlist for oversubscription. For those listed as N/A, there was no waitlist.

**Table B2.** Open-enrollment Charter Schools Included in **Lottery Analysis**, Lotteries by School and Grade, 2012-13\*

<b>Charter School</b>	<b>Total Enrollment</b>	<b>Lottery Grade</b>	<b>New Students</b>	<b>Waitlist Students</b>	<b>Total</b>
Academics Plus	640	4	10	24	34
		5	10	26	36
eStem Elementary	471	4	14	270	284
eStem Middle	509	5	40	294	334
		6	14	240	254
		7	15	177	192
		8	19	209	228
KIPP Helena/W. Helena	858	4	17	16	33
		5	70	17	87
		6	41	20	61
		7	24	24	48
		8	20	27	47
LISA Academy (Main)	730	6	167	61	228
LISA Academy North Little Rock	514	4	13	10	23
		6	24	12	36
<b>Total</b>			<b>498</b>	<b>1427</b>	<b>1925</b>

\*While eStem High School and Little Rock Preparatory Academy reported waitlists in 2012-13, they were omitted from analysis as the sample size for the new students or waitlist students for those grades and schools was less than 10.

## Appendix C: Quasi-Experimental Design for 2012-2014 Evaluation of Arkansas Public Charter Schools and Charter School Lottery Waitlist

Step	Description
<b>I. Build Student Level Dataset for all eligible students</b>	<p>A. Dataset includes data from 2011-12 to 2013-14 school years.</p> <p>B. Dataset includes for each student:</p> <ol style="list-style-type: none"> <li>1. Unique ID</li> <li>2. Grade level each year</li> <li>3. Standardized test scores from each year for each subject</li> <li>4. Free and Reduced Lunch (FRL) status</li> <li>5. Race/Ethnicity</li> <li>6. Gender</li> </ol>
<b>II. Lottery Procedure</b>	<p>A. Using data provided by the ADE, charter lottery winners were inferred from identification of new charter students by comparing students enrolled in the 2012-13 school year to previous year enrollment.</p> <p>B. Waitlist student identifiers were provided by the ADE and matched to demographic data and examination scores. For students who applied to multiple charter schools and appeared on multiple waitlists, the charter application was randomized. Application was attributed to one school based on the randomization result.</p> <p>C. Oversubscription was identified by comparing the number of new students within each school and grade with the number of waitlist students for the same school and grade. It was assumed that a lottery occurred for grades in which there were waitlist students. However, if the sample of new students or waitlist students was less than 10, the lottery for that grade in that school was omitted from analysis.</p>
<b>III. Matching Procedure</b>	<p>Benchmark Matching Process (Conducted Separately for Math and Literacy)</p> <ol style="list-style-type: none"> <li>1. Students are first matched with a student in the same grade in both the outcome year and baseline or matching year (generally the year before).</li> <li>2. For the Math and Literacy analyses, separately, all students are matched based on previous year scores on the same subject test, rounded to the nearest 0.01 z-score unit. Note, the other subject test score is used as part of the propensity score in step 4, as having a matched test score in the same subject is more relevant for controlling for prior performance. Therefore, the Math analysis matches first on Math examination scores, and the Literacy analysis matches first on Literacy examination scores.</li> <li>3. A propensity score is then created using FRL status, race/ethnicity (African-American, Asian-American or Pacific Islander, Hispanic-American, Native</li> </ol>

American, White, or “Two or more races”), gender, and the “other” test score (Literacy for the Math analysis and Math for the Literacy analysis).

4. Finally, all matches are based on guaranteeing exact matches from step 1 and 2, and the closest available propensity score match from step 3.

#### **IV. Comparison Analysis**

- A. Regression Analysis
  - B. Analysis Types: All Charters, Charter Organizations with Multiple Charters (Networks), Individual Schools
  - C. Other subgroup studies: By Charter Network, By Location (LR Metro v. Other)
-

**Appendix D: Baseline Equivalency by Included Charter Schools**

*All Charter Schools (Little Rock & KIPP)*

**Table D1.** Baseline Equivalency for Benchmark Analysis in **Math, All Charters (Little Rock & KIPP), 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	1055	1055	-	1108	1108	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	-0.18	-0.18	(0.00)	-0.10	-0.10	(0.00)
<b>Prior Year Literacy Z-Score</b>	0.00	-0.04	0.04	0.00	-0.01	0.01
<b>% FRL</b>	0.71	0.58	0.13 ***	0.80	0.59	0.21 ***
<b>% Minority</b>	0.76	0.68	0.08 ***	0.84	0.70	0.14 ***
<b>% Female</b>	0.49	0.55	(0.06) ***	0.46	0.51	(0.05) ***

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D2.** Baseline Equivalency for Benchmark Analysis in **Literacy, All Charters (Little Rock & KIPP), 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	1145	1145	-	1188	1188	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	-1.00	-0.16	(0.84) *	-0.19	-0.08	(0.11) ***
<b>Prior Year Literacy Z-Score</b>	0.01	0.01	-	0.01	0.01	(0.00)
<b>% FRL</b>	0.73	0.59	0.14 ***	0.82	0.60	0.22 ***
<b>% Minority</b>	0.77	0.67	0.09 ***	0.85	0.71	0.14 ***
<b>% Female</b>	0.49	0.52	(0.03)	0.49	0.51	(0.02)

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

*All Little Rock Charter Schools*

**Table D3.** Baseline Equivalency for Benchmark Analysis in **Math, All Little Rock Charters, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	864	864	-	870	870	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	-0.14	-0.14	(0.00)	-0.04	-0.04	(0.00)
<b>Prior Year Literacy Z-Score</b>	0.04	-0.01	0.05	0.05	0.04	0.01
<b>% FRL</b>	0.58	0.52	0.07 ***	0.63	0.53	0.09 ***
<b>% Minority</b>	0.68	0.63	0.05 **	0.71	0.65	0.07 ***
<b>% Female</b>	0.52	0.53	(0.02)	0.47	0.50	(0.04)

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D4.** Baseline Equivalency for Benchmark Analysis in **Literacy, All Little Rock Charters, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	928	928	-	949	949	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	-0.03	-0.11	0.09 *	0.04	-0.09	0.13 ***
<b>Prior Year Literacy Z-Score</b>	0.06	0.06	(0.00)	0.04	0.04	(0.00)
<b>% FRL</b>	0.59	0.52	0.07 ***	0.66	0.54	0.11 ***
<b>% Minority</b>	0.68	0.62	0.06 ***	0.72	0.66	0.06 ***
<b>% Female</b>	0.50	0.52	(0.02)	0.46	0.52	(0.06) ***

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

*Individual Charter Schools*

**Table D5.** Baseline Equivalency for Benchmark Analysis in **Math, Academics Plus, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	143	143	-	154	154	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	0.08	0.08	(0.00)	0.25	0.25	(0.00)
<b>Prior Year Literacy Z-Score</b>	0.31	0.18	0.13	0.27	0.29	(0.02)
<b>% FRL</b>	0.38	0.42	(0.04)	0.37	0.32	0.05
<b>% Minority</b>	0.32	0.36	(0.04)	0.26	0.24	0.02
<b>% Female</b>	0.45	0.43	0.02	0.48	0.45	0.03

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D6.** Baseline Equivalency for Benchmark Analysis in **Literacy, Academics Plus, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	165	165	-	172	172	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	0.08	0.13	(0.06)	0.33	0.31	0.02
<b>Prior Year Literacy Z-Score</b>	0.33	0.33	(0.00)	0.34	0.34	(0.00)
<b>% FRL</b>	0.33	0.31	0.02	0.33	0.31	0.02
<b>% Minority</b>	0.26	0.27	(0.01)	0.27	0.27	(0.01)
<b>% Female</b>	0.46	0.42	0.04	0.50	0.48	0.02

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D7.** Baseline Equivalency for Benchmark Analysis in **Math, Covenant Keepers, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	47	47	-	101	101	-
<b>Grades Served</b>	6-8		-	6-8		-
<b>Prior Year Math Z-Score</b>	-0.82	-0.79	(0.03)	-0.71	-0.69	(0.01)
<b>Prior Year Literacy Z-Score</b>	-0.42	-0.66	0.24	-0.71	-0.59	(0.12)
<b>% FRL</b>	0.94	0.77	0.17 **	0.87	0.72	0.15 ***
<b>% Minority</b>	1.00	0.85	0.15 ***	1.00	0.82	0.18 ***
<b>% Female</b>	0.40	0.55	(0.15)	0.42	0.48	(0.06)

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D8.** Baseline Equivalency for Benchmark Analysis in **Literacy, Covenant Keepers, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	56	56	-	84	84	-
<b>Grades Served</b>	6-8		-	6-8		-
<b>Prior Year Math Z-Score</b>	-0.84	-0.60	(0.24)	-0.83	-0.86	0.02
<b>Prior Year Literacy Z-Score</b>	-0.46	-0.41	(0.05)	-0.77	-0.77	0.00
<b>% FRL</b>	0.91	0.70	0.21 ***	0.87	0.89	(0.02)
<b>% Minority</b>	1.00	0.77	0.23 ***	1.00	1.00	(0.00)
<b>% Female</b>	0.39	0.55	(0.16)	0.43	0.52	(0.10)

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D9.** Baseline Equivalency for Benchmark Analysis in **Math, All eStem, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	381	381	-	357	357	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	-0.03	-0.03	(0.00)	0.09	0.09	(0.00)
<b>Prior Year Literacy Z-Score</b>	0.10	0.10	(0.00)	0.12	0.20	(0.08)
<b>% FRL</b>	0.40	0.40	0.00	0.43	0.42	0.01
<b>% Minority</b>	0.57	0.56	0.01	0.60	0.56	0.04
<b>% Female</b>	0.51	0.57	(0.06)	0.50	0.52	(0.02)

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

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**Table D10.** Baseline Equivalency for Benchmark Analysis in **Literacy, All eStem, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	409	409	-	401	401	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	0.05	0.00	0.05	0.17	0.09	0.07
<b>Prior Year Literacy Z-Score</b>	0.17	0.18	(0.00)	0.22	0.22	0.00
<b>% FRL</b>	0.39	0.38	0.01	0.40	0.40	(0.00)
<b>% Minority</b>	0.58	0.53	0.05	0.61	0.57	0.04
<b>% Female</b>	0.43	0.55	(0.12)	0.51	0.53	(0.03)

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D11.** Baseline Equivalency for Benchmark Analysis in **Math, eStem Elementary, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	67	67	-	68	68	-
<b>Grades Served</b>	4		-	4		-
<b>Prior Year Math Z-Score</b>	-0.10	-0.10	(0.00)	0.08	0.08	(0.00)
<b>Prior Year Literacy Z-Score</b>	-0.22	-0.08	(0.14)	-0.08	0.13	(0.21)
<b>% FRL</b>	0.40	0.40	(0.00)	0.43	0.41	0.01
<b>% Minority</b>	0.52	0.51	0.01	0.62	0.62	(0.00)
<b>% Female</b>	0.49	0.51	(0.02)	0.53	0.43	0.10

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D12.** Baseline Equivalency for Benchmark Analysis in **Literacy, eStem Elementary, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	71	71	-	74	74	-
<b>Grades Served</b>	4		-	4		-
<b>Prior Year Math Z-Score</b>	-0.17	-0.29	0.12	0.13	-0.04	0.17
<b>Prior Year Literacy Z-Score</b>	-0.22	-0.22	0.00	-0.06	-0.06	(0.00)
<b>% FRL</b>	0.39	0.38	0.01	0.36	0.38	(0.01)
<b>% Minority</b>	0.55	0.54	0.01	0.58	0.50	0.08
<b>% Female</b>	0.52	0.42	0.10	0.53	0.35	0.18 **

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D13.** Baseline Equivalency for Benchmark Analysis in **Math, eStem Middle School, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	310	310	-	294	294	-
<b>Grades Served</b>	5-8		-	5-8		-
<b>Prior Year Math Z-Score</b>	0.00	0.00	(0.00)	0.09	0.09	(0.00)
<b>Prior Year Literacy Z-Score</b>	0.17	0.14	0.02	0.17	0.22	(0.06)
<b>% FRL</b>	0.41	0.40	0.01	0.43	0.43	0.00
<b>% Minority</b>	0.59	0.57	0.02	0.61	0.57	0.04
<b>% Female</b>	0.51	0.59	(0.08) **	0.49	0.56	(0.06)

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D14.** Baseline Equivalency for Benchmark Analysis in **Literacy, eStem Middle School, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	342	342	-	331	331	-
<b>Grades Served</b>	5-8		-	5-8		-
<b>Prior Year Math Z-Score</b>	0.11	0.03	0.08	0.13	0.11	0.02
<b>Prior Year Literacy Z-Score</b>	0.26	0.26	(0.01)	0.25	0.25	(0.00)
<b>% FRL</b>	0.38	0.37	0.01	0.40	0.41	(0.00)
<b>% Minority</b>	0.57	0.54	0.03	0.62	0.58	0.04
<b>% Female</b>	0.53	0.56	(0.03)	0.50	0.55	(0.05)

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D15.** Baseline Equivalency for Benchmark Analysis in **Math, Jacksonville Lighthouse, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	169	169	-	177	177	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	-0.30	-0.30	(0.00)	-0.20	-0.20	(0.00)
<b>Prior Year Literacy Z-Score</b>	-0.20	-0.12	(0.09)	-0.23	-0.14	(0.09)
<b>% FRL</b>	0.63	0.66	(0.02)	0.73	0.75	(0.02)
<b>% Minority</b>	0.69	0.70	(0.01)	0.73	0.76	(0.02)
<b>% Female</b>	0.55	0.62	(0.07)	0.47	0.56	(0.09) *

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D16.** Baseline Equivalency for Benchmark Analysis in **Literacy, Jacksonville Lighthouse, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	189	189	-	196	196	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	-0.23	-0.36	0.13	-0.13	-0.26	0.13
<b>Prior Year Literacy Z-Score</b>	-0.21	-0.21	(0.00)	-0.14	-0.13	(0.00)
<b>% FRL</b>	0.63	0.62	0.01	0.73	0.73	(0.01)
<b>% Minority</b>	0.66	0.65	0.01	0.71	0.75	(0.04)
<b>% Female</b>	0.56	0.53	0.03	0.54	0.54	(0.00)

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D17.** Baseline Equivalency for Benchmark Analysis in **Math, All KIPP Charters, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	79	79	-	89	89	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	-0.44	-0.44	(0.00)	-0.45	-0.45	(0.00)
<b>Prior Year Literacy Z-Score</b>	-0.40	-0.28	(0.12)	-0.57	-0.27	(0.31) **
<b>% FRL</b>	0.95	0.94	0.01	0.98	0.96	0.02
<b>% Minority</b>	0.97	0.99	(0.01)	0.96	0.96	(0.00)
<b>% Female</b>	0.43	0.54	(0.11)	0.66	0.53	0.13 *

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D18.** Baseline Equivalency for Benchmark Analysis in **Literacy, All KIPP Charters, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	101	101	-	85	85	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	-0.51	-0.32	(0.19) *	-0.56	-0.39	(0.17)
<b>Prior Year Literacy Z-Score</b>	-0.19	-0.19	(0.00)	-0.17	-0.17	(0.00)
<b>% FRL</b>	0.95	0.95	(0.00)	1.00	0.98	0.02
<b>% Minority</b>	0.95	0.96	(0.01)	0.98	1.00	(0.02)
<b>% Female</b>	0.47	0.54	(0.08)	0.64	0.53	0.11

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D19.** Baseline Equivalency for Benchmark Analysis in **Math, KIPP Blytheville, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	20	20	-	54	54	-
<b>Grades Served</b>	4-7		-	4-8		-
<b>Prior Year Math Z-Score</b>	-0.30	-0.30	(0.00)	-0.49	-0.49	(0.00)
<b>Prior Year Literacy Z-Score</b>	-0.17	-0.13	(0.04)	-0.31	-0.31	(0.00)
<b>% FRL</b>	0.95	0.95	(0.00)	0.98	0.98	(0.00)
<b>% Minority</b>	1.00	1.00	(0.00)	0.91	0.96	(0.06)
<b>% Female</b>	0.55	0.70	(0.15)	0.57	0.50	0.07

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D20.** Baseline Equivalency for Benchmark Analysis in **Literacy, KIPP Blytheville, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	30	30	-	49	49	-
<b>Grades Served</b>	4-7		-	4-8		-
<b>Prior Year Math Z-Score</b>	-0.18	-0.21	0.03	-0.44	-0.35	(0.10)
<b>Prior Year Literacy Z-Score</b>	0.04	0.04	0.01	-0.20	-0.20	(0.00)
<b>% FRL</b>	0.90	0.90	(0.00)	1.00	0.98	0.02
<b>% Minority</b>	0.97	0.97	(0.00)	0.98	1.00	(0.02)
<b>% Female</b>	0.63	0.67	(0.03)	0.59	0.51	0.08

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D21.** Baseline Equivalency for Benchmark Analysis in **Math, KIPP Helena, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	69	69	-	71	71	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	-0.50	-0.50	(0.00)	-0.47	-0.47	(0.00)
<b>Prior Year Literacy Z-Score</b>	-0.46	-0.34	(0.12)	-0.43	-0.27	(0.16) *
<b>% FRL</b>	0.96	0.96	(0.00)	0.96	0.96	(0.00)
<b>% Minority</b>	0.99	0.99	(0.00)	0.99	0.96	0.03
<b>% Female</b>	0.43	0.52	(0.09)	0.62	0.54	0.08

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

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**Table D22.** Baseline Equivalency for Benchmark Analysis in **Literacy, KIPP Helena, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	88	88	-	69	69	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	-0.56	-0.26	(0.30) ***	-0.40	-0.34	(0.07)
<b>Prior Year Literacy Z-Score</b>	-0.12	-0.12	(0.00)	-0.91	-0.91	(0.00)
<b>% FRL</b>	0.94	0.95	(0.01)	0.97	0.97	(0.00)
<b>% Minority</b>	0.94	0.98	(0.03)	0.93	1.00	(0.07) **
<b>% Female</b>	0.53	0.47	0.07	0.68	0.52	0.16 **

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D23.** Baseline Equivalency for Benchmark Analysis in **Math, All LISA Academies, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	315	315	-	366	366	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	0.00	0.00	(0.00)	0.11	0.11	(0.00)
<b>Prior Year Literacy Z-Score</b>	0.10	0.19	(0.09)	0.11	0.23	(0.11) *
<b>% FRL</b>	0.54	0.56	(0.01)	0.43	0.43	(0.00)
<b>% Minority</b>	0.65	0.59	0.06	0.63	0.61	0.02
<b>% Female</b>	0.49	0.57	(0.08)	0.52	0.53	(0.01)

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D24.** Baseline Equivalency for Benchmark Analysis in **Literacy, All LISA Academies, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	362	362	-	420	420	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	0.06	0.80	(0.74)	0.12	0.22	(0.10) *
<b>Prior Year Literacy Z-Score</b>	0.21	0.21	(0.00)	0.29	0.29	0.00
<b>% FRL</b>	0.43	0.43	(0.00)	0.42	0.40	0.01
<b>% Minority</b>	0.61	0.58	0.03	0.62	0.60	0.03
<b>% Female</b>	0.52	0.58	(0.06)	0.51	0.54	(0.03)

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

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**Table D25.** Baseline Equivalency for Benchmark Analysis in **Math, LISA Academy (Main), 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	206	206	-	222	222	-
<b>Grades Served</b>	6-8		-	6-8		-
<b>Prior Year Math Z-Score</b>	0.03	0.03	(0.00)	0.10	0.10	(0.00)
<b>Prior Year Literacy Z-Score</b>	0.13	0.23	(0.10)	0.11	0.25	(0.14)
<b>% FRL</b>	0.42	0.43	(0.01)	0.46	0.46	(0.00)
<b>% Minority</b>	0.60	0.65	(0.04)	0.64	0.69	(0.05)
<b>% Female</b>	0.47	0.57	(0.10) **	0.51	0.57	(0.06)

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D26.** Baseline Equivalency for Benchmark Analysis in **Literacy, LISA Academy (Main), 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	241	241	-	267	267	-
<b>Grades Served</b>	6-8		-	6-8		-
<b>Prior Year Math Z-Score</b>	0.08	0.16	(0.07)	0.12	0.20	(0.08)
<b>Prior Year Literacy Z-Score</b>	0.26	0.26	(0.01)	0.30	0.30	(0.00)
<b>% FRL</b>	0.43	0.43	0.00	0.43	0.41	0.02
<b>% Minority</b>	0.60	0.61	(0.01)	0.62	0.65	(0.03)
<b>% Female</b>	0.51	0.54	(0.04)	0.51	0.55	(0.04)

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D27.** Baseline Equivalency for Benchmark Analysis in **Math, LISA Academy North Little Rock, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	122	122	-	165	165	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	0.02	0.02	(0.00)	0.11	0.11	(0.00)
<b>Prior Year Literacy Z-Score</b>	0.10	0.15	(0.05)	0.13	0.09	0.05
<b>% FRL</b>	0.45	0.49	(0.04)	0.39	0.39	(0.00)
<b>% Minority</b>	0.52	0.52	0.01	0.53	0.52	0.01
<b>% Female</b>	0.49	0.60	(0.11) *	0.52	0.49	0.02

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

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**Table D28.** Baseline Equivalency for Benchmark Analysis in **Literacy, LISA Academy North Little Rock, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	136	136	-	203	203	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	0.06	0.01	0.05	0.17	0.19	(0.02)
<b>Prior Year Literacy Z-Score</b>	0.14	0.14	(0.00)	0.23	0.23	(0.00)
<b>% FRL</b>	0.42	0.46	(0.04)	0.38	0.41	(0.02)
<b>% Minority</b>	0.49	0.45	0.04	0.52	0.51	0.01
<b>% Female</b>	0.51	0.48	0.04	0.51	0.47	0.04

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D29.** Baseline Equivalency for Benchmark Analysis in **Math, Little Rock Preparatory Academy, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	104	104	-	122	122	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	-0.81	-0.80	(0.01)	-0.61	-0.60	(0.00)
<b>Prior Year Literacy Z-Score</b>	-0.52	-0.57	0.05	-0.47	-0.45	(0.02)
<b>% FRL</b>	0.77	0.70	0.07	0.84	0.80	0.04
<b>% Minority</b>	1.00	0.96	0.04 **	1.00	0.95	0.05 ***
<b>% Female</b>	0.47	0.43	0.04	0.53	0.45	0.08

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table D30.** Baseline Equivalency for Benchmark Analysis in **Literacy, Little Rock Preparatory Academy, 2011-13**

	2011-12			2012-13		
	Charter	Waitlist	Difference	Charter	Waitlist	Difference
<b>Number of Observations</b>	101	104	-	124	124	-
<b>Grades Served</b>	4-8		-	4-8		-
<b>Prior Year Math Z-Score</b>	-0.75	-0.76	0.01	-0.55	-0.62	0.07
<b>Prior Year Literacy Z-Score</b>	-0.55	-0.55	0.00	-0.44	-0.44	(0.00)
<b>% FRL</b>	0.77	0.78	(0.01)	0.81	0.82	(0.01)
<b>% Minority</b>	1.00	1.00	(0.00)	1.00	1.00	(0.00)
<b>% Female</b>	0.50	0.52	(0.02)	0.49	0.45	0.04

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Appendix E: Academic Effect of Included Charter Schools, Regression Results, 2012-14**

**Table E1.** Explanation of Terms for Regression Variables

<b>Variable</b>	<b>Description</b>
Charter Effect	The effect size of being enrolled in a charter school.
Prior Year Math Z-Score	The effect of previous year math score on current year score.
Economic Disadvantage (FRL)	The effect of being eligible for Free or Reduced Lunch.
African-American	The effect of being an African-American student.
Hispanic	The effect of being a Hispanic student.
Other Non-White Race	The effect of being a student of an “other” non-white race.
Female	The effect of being female.
Prior Year Literacy Z-Score	The effect of previous year literacy score on current year score.
Switched Schools	The effect of having switched schools from the previous year.
Constant	The starting point for outcomes to build from, using other variables.

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**Table E1.** Academic Effect of All Charters (Little Rock & KIPP) in Math with OLS Regression, 2012-14

	2012-13		2013-14
<b>Charter Effect</b>	<b>0.0869</b> ***		<b>0.0260</b>
	<b>(0.0236)</b>		<b>(0.0235)</b>
<b>Prior Year Math Z-Score</b>	0.67 ***	0.619 ***	
	(0.0205)	(0.0192)	
<b>Economic Disadvantage (FRL)</b>	-0.0459	-0.0807 ***	
	(0.0280)	(0.0288)	
<b>African American</b>	-0.121 ***	-0.144 ***	
	(0.0306)	(0.0303)	
<b>Hispanic</b>	0.0485	-0.199 ***	
	(0.104)	(0.0727)	
<b>Other Non-White Race</b>	0.111	-0.0232	
	(0.0779)	(0.102)	
<b>Female</b>	-0.00727	-0.00770	
	(0.0244)	(0.0227)	
<b>Prior Year Literacy Z-Score</b>	0.206 ***	0.236 ***	
	(0.0201)	(0.0194)	
<b>Switched Schools</b>	-0.0753 ***	-0.105 ***	
	(0.0239)	(0.0225)	
<b>Constant</b>	0.118 ***	0.171 ***	
	(0.0308)	(0.0306)	
<b>Observations</b>	2,110	2,216	
<b>Adjusted R<sup>2</sup></b>	0.697	0.709	

\*Significant at the 10% level, \*\*Significant at the 5% level, \*\*\*Significant at the 1% level

**Table E2.** Academic Effect of All Charters (Little Rock & KIPP) in Literacy Benchmarks, 2012-14

	2012-13		2013-14
<b>Charter Effect</b>	<b>0.0191</b>		<b>-0.0118</b>
	<b>(0.0243)</b>		<b>(0.0222)</b>
<b>Prior Year Literacy Z-Score</b>	0.618 ***	0.612 ***	
	(0.0219)	(0.0192)	
<b>Economic Disadvantage (FRL)</b>	-0.0168	0.0206	
	(0.0293)	(0.0254)	
<b>African American</b>	-0.00938	-0.0378	
	(0.0311)	(0.0279)	
<b>Hispanic</b>	0.0349	-0.152 **	
	(0.0753)	(0.0634)	
<b>Other Non-White Race</b>	-0.0319	-0.0906	
	(0.100)	(0.0705)	
<b>Female</b>	0.164 ***	0.119 ***	
	(0.0239)	(0.0214)	
<b>Prior Year Math Z-Score</b>	0.216 ***	0.239 ***	
	(0.0184)	(0.0173)	
<b>Switched Schools</b>	-0.0685 ***	-0.0439 **	
	(0.0241)	(0.0216)	
<b>Constant</b>	-0.0141	-0.0107	
	(0.0302)	(0.0273)	
<b>Observations</b>	2,290	2,376	
<b>Adjusted R<sup>2</sup></b>	0.640	0.696	

\*Significant at the 10% level, \*\*Significant at the 5% level, \*\*\*Significant at the 1% level

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**Table E3.** Academic Effect of All Little Rock Charter Schools in Math Benchmarks, 2012-14

	2012-13	2013-14
<b>Charter Effect</b>	<b>0.0761 ***</b>	<b>0.0108</b>
	<b>(-0.0256)</b>	<b>(0.0256)</b>
<b>Prior Year Math Z-Score</b>	0.652 ***	0.635 ***
	(-0.0221)	(0.0220)
<b>Economic Disadvantage (FRL)</b>	-0.0822 ***	-0.0657 **
	(-0.0293)	(0.0286)
<b>African American</b>	-0.177 ***	-0.134 ***
	(-0.0313)	(0.0308)
<b>Hispanic</b>	0.0289	-0.155 *
	(-0.101)	(0.0847)
<b>Other Non-White Race</b>	0.177 **	-0.0634
	(-0.0812)	(0.102)
<b>Female</b>	-0.0214	-0.0232
	(-0.0268)	(0.0258)
<b>Prior Year Literacy Z-Score</b>	0.193 ***	0.238 ***
	(-0.0221)	(0.0215)
<b>Switched Schools</b>	-0.0767 ***	-0.103 ***
	(-0.0263)	(0.0254)
<b>Constant</b>	0.163 ***	0.161 ***
	(-0.0321)	(0.0315)
<b>Observations</b>	1728	1,740
<b>Adjusted R<sup>2</sup></b>	0.708	0.714

\*Significant at the 10% level, \*\*Significant at the 5% level,  
\*\*\*Significant at the 1% level

**Table E4.** Academic Effect of All Little Rock Charter Schools in Literacy Benchmarks, 2012-14

	2012-13	2013-14
<b>Charter Effect</b>	<b>0.00526</b>	<b>-0.0311</b>
	<b>(-0.0262)</b>	<b>(0.0241)</b>
<b>Prior Year Literacy Z-Score</b>	0.575 ***	0.616 ***
	(-0.0243)	(0.0210)
<b>Economic Disadvantage (FRL)</b>	-0.0415	-0.0302
	(-0.0302)	(0.0264)
<b>African American</b>	-0.0459	-0.0600 **
	(-0.0317)	(0.0283)
<b>Hispanic</b>	0.0774	-0.163 **
	(-0.0842)	(0.0702)
<b>Other Non-White Race</b>	0.0131	-0.0497
	(-0.0791)	(0.0701)
<b>Female</b>	0.18 ***	0.116 ***
	(-0.0259)	(0.0239)
<b>Prior Year Math Z-Score</b>	0.228 ***	0.220 ***
	(-0.0197)	(0.0187)
<b>Switched Schools</b>	-0.0613 **	-0.0399 *
	(-0.0263)	(0.0238)
<b>Constant</b>	0.0118	0.0271
	(-0.0311)	(0.0284)
<b>Observations</b>	1856	1,898
<b>Adjusted R<sup>2</sup></b>	0.634	0.701

\*Significant at the 10% level, \*\*Significant at the 5% level,  
\*\*\*Significant at the 1% level

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<b>Table E5. Academic Effect of Academics Plus in Math Benchmarks, 2012-14</b>	<b>2012-13</b>	<b>2013-14</b>	<b>Table E6. Academic Effect of Academics Plus in Literacy Benchmarks, 2012-14</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>-0.0176</b> <b>(0.0604)</b>	<b>0.105</b> * <b>(0.0623)</b>	<b>Charter Effect</b>	<b>0.0171</b> <b>(0.0565)</b>	<b>-0.00162</b> <b>(0.0490)</b>
<b>Prior Year Math Z-Score</b>	0.799 *** (0.0553)	0.625 *** (0.0535)	<b>Prior Year Literacy Z-Score</b>	0.574 *** (0.0567)	0.616 *** (0.0541)
<b>Economic Disadvantage (FRL)</b>	-0.171 ** (0.0692)	-0.0642 (0.0651)	<b>Economic Disadvantage (FRL)</b>	-0.122 (0.0741)	-0.00483 (0.0594)
<b>African American</b>	-0.0271 (0.0730)	-0.0663 (0.0818)	<b>African American</b>	-0.187 * (0.0972)	-0.108 (0.0729)
<b>Hispanic</b>	0.266 *** (0.102)	-0.259 ** (0.130)	<b>Hispanic</b>	0.168 (0.188)	-0.182 * (0.109)
<b>Other Non-White Race</b>	0.228 (0.279)	0.116 (0.156)	<b>Other Non-White Race</b>	0.298 *** (0.0825)	0.0447 (0.0974)
<b>Female</b>	-0.0156 (0.0592)	0.0540 (0.0622)	<b>Female</b>	0.196 *** (0.0558)	0.149 *** (0.0525)
<b>Prior Year Literacy Z-Score</b>	0.141 *** (0.0529)	0.201 *** (0.0524)	<b>Prior Year Math Z-Score</b>	0.232 *** (0.0517)	0.120 *** (0.0387)
<b>Switched Schools</b>	-0.115 * (0.0641)	-0.0483 (0.0607)	<b>Switched Schools</b>	0.0151 (0.0630)	-0.0190 (0.0513)
<b>Constant</b>	0.136 ** (0.0659)	0.0378 (0.0713)	<b>Constant</b>	-0.0281 (0.0587)	0.0449 (0.0531)
<b>Observations</b>	286	308	<b>Observations</b>	330	344
<b>Adjusted R<sup>2</sup></b>	0.722	0.594	<b>Adjusted R<sup>2</sup></b>	0.585	0.618
*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level			*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level		

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<b>Table E7. Academic Effect of Covenant Keepers in Math Benchmarks, 2012-14</b>	<b>2012-13</b>	<b>2013-14</b>			<b>Table E8. Academic Effect of Covenant Keepers in Literacy Benchmarks, 2012-14</b>	<b>2012-13</b>	<b>2013-14</b>		
<b>Charter Effect</b>	<b>-0.0609</b>	<b>-0.0813</b>			<b>Charter Effect</b>	<b>-0.0246</b>	<b>-0.0126</b>		
	<b>(0.119)</b>	<b>(0.0805)</b>				<b>(0.124)</b>	<b>(0.0929)</b>		
<b>Prior Year Math Z-Score</b>	0.646 ***	0.772 ***			<b>Prior Year Literacy Z-Score</b>	0.749 ***	0.627 ***		
	(0.106)	(0.0798)				(0.100)	(0.0796)		
<b>Economic Disadvantage (FRL)</b>	0.0958	-0.140			<b>Economic Disadvantage (FRL)</b>	-0.0420	-0.116		
	(0.177)	(0.109)				(0.135)	(0.141)		
<b>African American</b>	-0.0251	-0.112			<b>African American</b>	0.132	0.0602		
	(0.251)	(0.153)				(0.211)	(0.152)		
<b>Hispanic</b>	0.321	0.0865			<b>Hispanic</b>	0.134			
	(0.279)	(0.188)				(0.261)			
<b>Other Non-White Race</b>		-0.321 *			<b>Other Non-White Race</b>				
		(0.183)							
<b>Female</b>	-0.137	-0.0832			<b>Female</b>	0.160	0.229 **		
	(0.117)	(0.0788)				(0.118)	(0.0963)		
<b>Prior Year Literacy Z-Score</b>	0.265 **	0.177 **			<b>Prior Year Math Z-Score</b>	0.164 **	0.291 ***		
	(0.101)	(0.0699)				(0.0776)	(0.0809)		
<b>Switched Schools</b>	0.141	0.0862			<b>Switched Schools</b>	-0.0513	-0.0834		
	(0.108)	(0.0744)				(0.112)	(0.0945)		
<b>Constant</b>	-0.0735	0.123			<b>Constant</b>	-0.0301	-0.00946		
	(0.199)	(0.113)				(0.178)	(0.211)		
<b>Observations</b>	94	202			<b>Observations</b>	112	168		
<b>Adjusted R<sup>2</sup></b>	0.699	0.707			<b>Adjusted R<sup>2</sup></b>	0.644	0.604		
*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level					*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level				

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**Table E9. Academic Effect of All eStem Charter Schools in Math Benchmarks, 2012-14**

	2012-13	2013-14
<b>Charter Effect</b>	<b>0.0554</b> <b>(0.0408)</b>	<b>0.0129</b> <b>(0.0532)</b>
<b>Prior Year Math Z-Score</b>	0.670 *** (0.0353)	0.651 *** (0.0389)
<b>Economic Disadvantage (FRL)</b>	-0.0495 (0.0476)	-0.125 *** (0.0485)
<b>African American</b>	-0.162 *** (0.0471)	-0.177 *** (0.0508)
<b>Hispanic</b>	-0.0488 (0.133)	-0.112 (0.137)
<b>Other Non-White Race</b>	0.367 *** (0.132)	0.306 (0.240)
<b>Female</b>	-0.0771 * (0.0425)	-0.00740 (0.0422)
<b>Prior Year Literacy Z-Score</b>	0.190 *** (0.0350)	0.174 *** (0.0345)
<b>Switched Schools</b>	-0.170 *** (0.0425)	-0.0304 (0.0604)
<b>Constant</b>	0.219 *** (0.0480)	0.237 *** (0.0528)
<b>Observations</b>	762	714
<b>Adjusted R<sup>2</sup></b>	0.691	0.678

\*Significant at the 10% level, \*\*Significant at the 5% level,  
\*\*\*Significant at the 1% level

**Table E10. Academic Effect of All eStem Charter Schools in Literacy Benchmarks, 2012-14**

	2012-13	2013-14
<b>Charter Effect</b>	<b>0.0439</b> <b>(0.0369)</b>	<b>0.107</b> ** <b>(0.0495)</b>
<b>Prior Year Literacy Z-Score</b>	0.544 *** (0.0345)	0.576 *** (0.0313)
<b>Economic Disadvantage (FRL)</b>	-0.0276 (0.0480)	-0.0330 (0.0425)
<b>African American</b>	-0.0735 (0.0455)	-0.0838 ** (0.0423)
<b>Hispanic</b>	0.159 (0.123)	-0.247 *** (0.0788)
<b>Other Non-White Race</b>	0.0346 (0.105)	0.0648 (0.136)
<b>Female</b>	0.21 *** (0.0381)	0.128 *** (0.0358)
<b>Prior Year Math Z-Score</b>	0.224 *** (0.0277)	0.202 *** (0.0310)
<b>Switched Schools</b>	-0.0323 (0.0394)	-0.0386 (0.0529)
<b>Constant</b>	-0.00241 (0.0441)	0.00615 (0.0415)
<b>Observations</b>	818	802
<b>Adjusted R<sup>2</sup></b>	0.607	0.645

\*Significant at the 10% level, \*\*Significant at the 5% level,  
\*\*\*Significant at the 1% level

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<b>Table E11. Academic Effect of eStem Elementary in Math Benchmarks, 2012-14</b>				<b>Table E12. Academic Effect of eStem Elementary in Literacy Benchmarks, 2012-14</b>			
	<b>2012-13</b>		<b>2013-14</b>		<b>2012-13</b>		<b>2013-14</b>
<b>Charter Effect</b>	<b>0.392</b> ***		<b>0.258</b> **	<b>Charter Effect</b>	<b>-0.00633</b>		<b>-0.148</b>
	<b>(0.108)</b>		<b>(0.123)</b>		<b>(0.0943)</b>		<b>(0.184)</b>
<b>Prior Year Math Z-Score</b>	0.602 ***		0.773 ***	<b>Prior Year Literacy Z-Score</b>	0.607 ***		0.544 ***
	(0.0932)		(0.0976)		(0.0923)		(0.0844)
<b>Economic Disadvantage (FRL)</b>	0.0468		0.118	<b>Economic Disadvantage (FRL)</b>	-0.0684		0.212*
	(0.125)		(0.113)		(0.136)		(0.116)
<b>African American</b>	-0.0355		-0.359 ***	<b>African American</b>	0.236 *		-0.133
	(0.135)		(0.125)		(0.130)		(0.103)
<b>Hispanic</b>	0.169		-0.392	<b>Hispanic</b>	0.253		-0.207
	(0.206)		(0.268)		(0.184)		(0.264)
<b>Other Non-White Race</b>	0.446 **		0.187	<b>Other Non-White Race</b>	0.297		0.195
	(0.186)		(0.173)		(0.235)		(0.196)
<b>Female</b>	-0.152		-0.238 **	<b>Female</b>	0.0609		-0.00239
	(0.109)		(0.109)		(0.0989)		(0.0863)
<b>Prior Year Literacy Z-Score</b>	0.285 ***		0.174 **	<b>Prior Year Math Z-Score</b>	0.225 **		0.383 ***
	(0.106)		(0.0844)		(0.0881)		(0.0694)
<b>Switched Schools</b>	-0.113		-0.118	<b>Switched Schools</b>	0.0703		0.108
	(0.122)		(0.135)		(0.104)		(0.193)
<b>Constant</b>	0.0750		0.346 ***	<b>Constant</b>	-0.0244		-0.00128
	(0.123)		(0.112)		(0.104)		(0.0872)
<b>Observations</b>	134		136	<b>Observations</b>	142		148
<b>Adjusted R<sup>2</sup></b>	0.679		0.750	<b>Adjusted R<sup>2</sup></b>	0.658		0.750
*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level				*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level			

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<b>Table E13. Academic Effect of eStem Middle School in Math Benchmarks, 2012-14</b>			<b>Table E14. Academic Effect of eStem Middle School in Literacy Benchmarks, 2012-14</b>		
	<b>2012-13</b>	<b>2013-14</b>		<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>-0.0155</b> <b>(0.0429)</b>	<b>0.0433</b> <b>(0.0572)</b>	<b>Charter Effect</b>	<b>0.078 *</b> <b>(0.0407)</b>	<b>0.129 **</b> <b>(0.0522)</b>
<b>Prior Year Math Z-Score</b>	0.722 *** (0.0347)	0.642 *** (0.0399)	<b>Prior Year Literacy Z-Score</b>	0.534 *** (0.0381)	0.596 *** (0.0332)
<b>Economic Disadvantage (FRL)</b>	-0.0192 (0.0456)	-0.0998 ** (0.0486)	<b>Economic Disadvantage (FRL)</b>	-0.0345 (0.0528)	-0.0564 (0.0433)
<b>African American</b>	-0.102 ** (0.0512)	-0.179 *** (0.0531)	<b>African American</b>	-0.121 ** (0.0496)	-0.0572 (0.0465)
<b>Hispanic</b>	0.0561 (0.187)	-0.191 (0.139)	<b>Hispanic</b>	0.115 (0.131)	-0.182 ** (0.0832)
<b>Other Non-White Race</b>	0.286 ** (0.141)	-0.229 (0.156)	<b>Other Non-White Race</b>	0.0463 (0.0802)	-0.0712 (0.135)
<b>Female</b>	-0.102 ** (0.0456)	0.0465 (0.0443)	<b>Female</b>	0.188 *** (0.0416)	0.146 *** (0.0388)
<b>Prior Year Literacy Z-Score</b>	0.227 *** (0.0326)	0.181 *** (0.0349)	<b>Prior Year Math Z-Score</b>	0.222 *** (0.0305)	0.175 *** (0.0354)
<b>Switched Schools</b>	-0.173 *** (0.0435)	-0.109 * (0.0639)	<b>Switched Schools</b>	-0.0924 ** (0.0444)	-0.0926 (0.0569)
<b>Constant</b>	0.194 *** (0.0514)	0.222 *** (0.0554)	<b>Constant</b>	0.0414 (0.0496)	0.0178 (0.0457)
<b>Observations</b>	620	588	<b>Observations</b>	684	662
<b>Adjusted R<sup>2</sup></b>	0.729	0.703	<b>Adjusted R<sup>2</sup></b>	0.581	0.638
*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level			*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level		

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<b>Table E15. Academic Effect of Jacksonville Lighthouse in Math Benchmarks, 2012-14</b>			<b>Table E16. Academic Effect of Jacksonville Lighthouse in Literacy Benchmarks, 2012-14</b>		
	<b>2012-13</b>	<b>2013-14</b>		<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>0.0898 *</b>	<b>-0.00248</b>	<b>Charter Effect</b>	<b>0.026</b>	<b>-0.0927 *</b>
	<b>-0.051</b>	<b>(0.0515)</b>		<b>-0.0589</b>	<b>(0.0550)</b>
<b>Prior Year Math Z-Score</b>	0.702 ***	0.645 ***	<b>Prior Year Literacy Z-Score</b>	0.488 ***	0.545 ***
	-0.0433	(0.0454)		-0.0589	(0.0453)
<b>Economic Disadvantage (FRL)</b>	0.00551	-0.0301	<b>Economic Disadvantage (FRL)</b>	-0.0412	-0.0146
	-0.0577	(0.0728)		-0.0695	(0.0624)
<b>African American</b>	-0.138 **	-0.0873	<b>African American</b>	-0.0049	-0.0295
	-0.0639	(0.0789)		-0.0755	(0.0675)
<b>Hispanic</b>	-0.628 ***	-0.274	<b>Hispanic</b>	0.221	-0.104
	-0.168	(0.196)		-0.159	(0.103)
<b>Other Non-White Race</b>	-0.116	-0.185	<b>Other Non-White Race</b>	0.307	0.257 *
	-0.126	(0.154)		-0.208	(0.132)
<b>Female</b>	-0.0198	-0.00971	<b>Female</b>	0.205 ***	0.191 ***
	-0.0556	(0.0552)		-0.0625	(0.0574)
<b>Prior Year Literacy Z-Score</b>	0.174 ***	0.209 ***	<b>Prior Year Math Z-Score</b>	0.296 ***	0.237 ***
	-0.047	(0.0443)		-0.0491	(0.0443)
<b>Switched Schools</b>	0.118 **	-0.164 ***	<b>Switched Schools</b>	0.0407	-0.201 ***
	-0.0566	(0.0551)		-0.0621	(0.0586)
<b>Constant</b>	0.0434	0.141 **	<b>Constant</b>	-0.0979	0.0226
	-0.0697	(0.0705)		-0.0724	(0.0698)
<b>Observations</b>	338	354	<b>Observations</b>	378	392
<b>Adjusted R<sup>2</sup></b>	0.716	0.667	<b>Adjusted R<sup>2</sup></b>	0.585	0.581
*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level			*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level		

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**Table E17. Academic Effect of All KIPP Charter Schools in Math Benchmarks, 2012-14**

	2012-13	2013-14
<b>Charter Effect</b>	<b>0.186 **</b> <b>(0.0839)</b>	<b>-0.0358</b> <b>(0.0858)</b>
<b>Prior Year Math Z-Score</b>	0.774 *** (0.0846)	0.586 *** (0.0733)
<b>Economic Disadvantage (FRL)</b>	0.0863 (0.197)	-0.112 (0.191)
<b>African American</b>	-0.338 (0.296)	-0.43 ** (0.200)
<b>Hispanic</b>		-0.683 (0.419)
<b>Other Non-White Race</b>	-0.238 (0.340)	-1.201 *** (0.239)
<b>Female</b>	0.0632 (0.0886)	-0.188 * (0.0979)
<b>Prior Year Literacy Z-Score</b>	0.146 * (0.0760)	0.228 *** (0.0709)
<b>Switched Schools</b>	-0.0750 (0.0872)	-0.153 * (0.0846)
<b>Constant</b>	0.249 (0.281)	0.582 ** (0.270)
<b>Observations</b>	158	178
<b>Adjusted R<sup>2</sup></b>	0.636	0.636

\*Significant at the 10% level, \*\*Significant at the 5% level,  
\*\*\*Significant at the 1% level

**Table E18. Academic Effect of All KIPP Charter Schools in Literacy Benchmarks, 2012-14**

	2012-13	2013-14
<b>Charter Effect</b>	<b>0.0427</b> <b>(0.0879)</b>	<b>0.257 ***</b> <b>(0.0905)</b>
<b>Prior Year Literacy Z-Score</b>	0.587 *** (0.0669)	0.524 *** (0.0787)
<b>Economic Disadvantage (FRL)</b>	-0.0190 (0.144)	-0.239 ** (0.111)
<b>African American</b>	0.0693 (0.135)	-0.160 (0.400)
<b>Hispanic</b>	-1.471 *** (0.153)	-0.484 (0.462)
<b>Other Non-White Race</b>	0.0172 (0.346)	-0.435 (0.408)
<b>Female</b>	0.110 (0.0755)	-0.00719 (0.0899)
<b>Prior Year Math Z-Score</b>	0.197 *** (0.0607)	0.27 *** (0.0752)
<b>Switched Schools</b>	-0.0840 (0.0871)	-0.144 (0.0902)
<b>Constant</b>	-0.0186 (0.185)	0.420 (0.427)
<b>Observations</b>	202	170
<b>Adjusted R<sup>2</sup></b>	0.609	0.598

\*Significant at the 10% level, \*\*Significant at the 5% level,  
\*\*\*Significant at the 1% level

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<b>Table E19. Academic Effect of KIPP Blytheville in Math Benchmarks, 2012-14</b>			<b>Table E20. Academic Effect of KIPP Blytheville in Literacy Benchmarks, 2012-14</b>		
	<b>2012-13</b>	<b>2013-14</b>		<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>0.177</b> <b>(0.177)</b>	<b>0.181</b> <b>(0.112)</b>	<b>Charter Effect</b>	<b>0.123</b> <b>(0.142)</b>	<b>0.247</b> <b>(0.128)</b> *
<b>Prior Year Math Z-Score</b>	0.946 *** (0.201)	0.722 *** (0.118)	<b>Prior Year Literacy Z-Score</b>	0.0309 (0.203)	0.688 *** (0.0951)
<b>Economic Disadvantage (FRL)</b>	0.373 (0.221)	0.0991 (0.368)	<b>Economic Disadvantage (FRL)</b>	0.116 (0.240)	-0.292 *** (0.142)
<b>African American</b>	0.0530 (0.237)	-0.190 (0.289)	<b>African American</b>	0.269 (0.405)	-0.821 *** (0.137)
<b>Hispanic</b>		-0.712 * (0.411)	<b>Hispanic</b>		
<b>Other Non-White Race</b>		-0.994 *** (0.338)	<b>Other Non-White Race</b>	-0.0333 (0.546)	-0.844 *** (0.158)
<b>Female</b>	0.398 * (0.201)	-0.316 *** (0.125)	<b>Female</b>	0.362 ** (0.157)	0.0623 (0.127)
<b>Prior Year Literacy Z-Score</b>	-0.146 (0.164)	0.106 (0.116)	<b>Prior Year Math Z-Score</b>	0.643 *** (0.172)	0.245 *** (0.0947)
<b>Switched Schools</b>	-0.125 (0.198)	-0.202 * (0.116)	<b>Switched Schools</b>	0.0844 (0.161)	-0.0674 (0.129)
<b>Constant</b>	-0.621 * (0.347)	0.272 (0.482)	<b>Constant</b>	-0.562 (0.354)	1.031 *** (0.206)
<b>Observations</b>	40	108	<b>Observations</b>	60	98
<b>Adjusted R<sup>2</sup></b>	0.663	0.610	<b>Adjusted R<sup>2</sup></b>	0.609	0.664
*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level			*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level		

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<b>Table E21. Academic Effect of KIPP Delta Helena in Math Benchmarks, 2012-14</b>				<b>Table E22. Academic Effect of KIPP Delta Helena in Literacy Benchmarks, 2012-14</b>			
	<b>2012-13</b>		<b>2013-14</b>		<b>2012-13</b>		<b>2013-14</b>
<b>Charter Effect</b>	<b>0.213</b> **		<b>-0.0826</b>	<b>Charter Effect</b>	<b>0.0784</b>		<b>0.188</b> *
	<b>(0.0886)</b>		<b>(0.101)</b>		<b>(0.0883)</b>		<b>(0.101)</b>
<b>Prior Year Math Z-Score</b>	0.693 ***		0.583 **	<b>Prior Year Literacy Z-Score</b>	0.616 ***		0.542 ***
	(0.0774)		(0.0935)		(0.0694)		(0.0963)
<b>Economic Disadvantage (FRL)</b>	0.164		-0.199	<b>Economic Disadvantage (FRL)</b>	-0.229 **		-0.216
	(0.178)		(0.176)		(0.115)		(0.131)
<b>African American</b>	-0.642 ***		-0.241	<b>African American</b>	-0.0625		-0.0952
	(0.114)		(0.220)		(0.143)		(0.156)
<b>Hispanic</b>				<b>Hispanic</b>	-1.591 ***		-0.216
					(0.163)		(0.268)
<b>Other Non-White Race</b>	-0.6 ***		-1.01 **	<b>Other Non-White Race</b>	-0.631 *		
	(0.204)		(0.284)		(0.349)		
<b>Female</b>	-0.00344		-0.164	<b>Female</b>	0.0942		0.0598
	(0.0924)		(0.114)		(0.0802)		(0.105)
<b>Prior Year Literacy Z-Score</b>	0.173 **		0.253 **	<b>Prior Year Math Z-Score</b>	0.137 **		0.244 **
	(0.0731)		(0.0821)		(0.0636)		(0.0939)
<b>Switched Schools</b>	-0.0491		-0.124	<b>Switched Schools</b>	-0.0727		-0.0822
	(0.0914)		(0.105)		(0.0813)		(0.101)
<b>Constant</b>	0.479 ***		0.49 *	<b>Constant</b>	0.309		0.293
	(0.127)		(0.268)		(0.189)		(0.257)
<b>Observations</b>	138		142	<b>Observations</b>	176		138
<b>Adjusted R<sup>2</sup></b>	0.621		0.580	<b>Adjusted R<sup>2</sup></b>	0.628		0.582
*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level				*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level			

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<b>Table E23. Academic Effect of All LISA Academies in Math Benchmarks, 2012-14</b>			<b>Table E24. Academic Effect of All LISA Academies in Literacy Benchmarks, 2012-14</b>		
	<b>2012-13</b>	<b>2013-14</b>		<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>-0.0242</b> <b>(0.0429)</b>	<b>0.0164</b> <b>(0.0377)</b>	<b>Charter Effect</b>	<b>0.0575</b> <b>(0.0413)</b>	<b>-0.0252</b> <b>(0.0349)</b>
<b>Prior Year Math Z-Score</b>	0.699 *** (0.0348)	0.661 ** (0.0338)	<b>Prior Year Literacy Z-Score</b>	0.591 *** (0.0401)	0.625 ** (0.0371)
<b>Economic Disadvantage (FRL)</b>	-0.0493 (0.0490)	-0.0324 (0.0411)	<b>Economic Disadvantage (FRL)</b>	-0.140 *** (0.0471)	-0.0936 ** (0.0394)
<b>African American</b>	-0.114 ** (0.0504)	-0.108 (0.0420)	<b>African American</b>	0.0182 (0.0464)	0.00608 (0.0394)
<b>Hispanic</b>	-0.120 (0.113)	-0.274 (0.108)	<b>Hispanic</b>	0.149 (0.147)	0.00727 (0.100)
<b>Other Non-White Race</b>	0.0528 (0.138)	0.0761 (0.0831)	<b>Other Non-White Race</b>	0.0543 (0.0949)	-0.0467 (0.0807)
<b>Female</b>	-0.0157 (0.0443)	-0.0141 (0.0384)	<b>Female</b>	0.208 *** (0.0441)	0.138 ** (0.0353)
<b>Prior Year Literacy Z-Score</b>	0.187 *** (0.0390)	0.237 (0.0320)	<b>Prior Year Math Z-Score</b>	0.226 *** (0.0307)	0.19 ** (0.0312)
<b>Switched Schools</b>	-0.0797 * (0.0437)	-0.146 (0.0388)	<b>Switched Schools</b>	-0.0791 * (0.0425)	-0.0489 (0.0353)
<b>Constant</b>	0.168 *** (0.0525)	0.114 (0.0425)	<b>Constant</b>	-0.0430 (0.0487)	-0.0316 (0.0405)
<b>Observations</b>	630	732	<b>Observations</b>	724	840
<b>Adjusted R<sup>2</sup></b>	0.685	0.719	<b>Adjusted R<sup>2</sup></b>	0.609	0.643
*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level			*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level		

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<b>Table E25. Academic Effect of LISA Academy (Main) in Math Benchmarks, 2012-14</b>			<b>Table E26. Academic Effect of LISA Academy (Main) in Literacy Benchmarks, 2012-14</b>		
	<u>2012-13</u>	<u>2013-14</u>		<u>2012-13</u>	<u>2013-14</u>
<b>Charter Effect</b>	<b>-0.0181</b>	<b>0.0112</b>	<b>Charter Effect</b>	<b>0.192 ***</b>	<b>-0.0116</b>
	<b>(0.0539)</b>	<b>(0.0483)</b>		<b>(0.0561)</b>	<b>(0.0433)</b>
<b>Prior Year Math Z-Score</b>	0.716 ***	0.671	<b>* Prior Year Literacy Z-Score</b>	0.575 ***	0.597 *
	(0.0402)	(0.0385)		(0.0590)	(0.0448)
<b>Economic Disadvantage (FRL)</b>	-0.0913	-0.0595	<b>Economic Disadvantage (FRL)</b>	-0.105	-0.0737
	(0.0620)	(0.0569)		(0.0673)	(0.0477)
<b>African American</b>	-0.116 *	-0.0975	<b>* African American</b>	-0.0592	-0.00624
	(0.0673)	(0.0589)		(0.0683)	(0.0504)
<b>Hispanic</b>	-0.0516	-0.425	<b>* Hispanic</b>	0.118	0.00300
	(0.140)	(0.102)		(0.238)	(0.105)
<b>Other Non-White Race</b>	0.0192	0.118	<b>Other Non-White Race</b>	0.0604	-0.250 *
	(0.178)	(0.145)		(0.121)	(0.101)
<b>Female</b>	-0.0217	-0.0306	<b>Female</b>	0.232 ***	0.0713
	(0.0561)	(0.0516)		(0.0578)	(0.0439)
<b>Prior Year Literacy Z-Score</b>	0.179 ***	0.187	<b>* Prior Year Math Z-Score</b>	0.222 ***	0.230 *
	(0.0511)	(0.0440)		(0.0386)	(0.0361)
<b>Switched Schools</b>	-0.0817	-0.0782	<b>Switched Schools</b>	-0.0586	-0.0122
	(0.0555)	(0.0516)		(0.0561)	(0.0444)
<b>Constant</b>	0.171 **	0.139	<b>* Constant</b>	-0.0824	-0.0371
	(0.0691)	(0.0579)		(0.0733)	(0.0527)
<b>Observations</b>	412	444	<b>Observations</b>	482	534
<b>Adjusted R<sup>2</sup></b>	0.712	0.722	<b>Adjusted R<sup>2</sup></b>	0.586	0.638
*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level			*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level		

ARKANSAS CHARTER SCHOOL PROGRAM EVALUATION

<b>Table E27. Academic Effect of LISA Academy (North Little Rock) in Math Benchmarks, 2012-14</b>			<b>Table E28. Academic Effect of LISA Academy (North Little Rock) in Literacy Benchmarks, 2012-14</b>		
	<b>2012-13</b>	<b>2013-14</b>		<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>-0.0101</b> <b>(0.0647)</b>	<b>-0.0361</b> <b>(0.0609)</b>	<b>Charter Effect</b>	<b>-0.221 ***</b> <b>(0.0613)</b>	<b>-0.0283</b> <b>(0.0518)</b>
<b>Prior Year Math Z-Score</b>	0.656 *** (0.0634)	0.639 *** (0.0596)	<b>Prior Year Literacy Z-Score</b>	0.54 *** (0.0595)	0.684 *** (0.0522)
<b>Economic Disadvantage (FRL)</b>	0.0163 (0.0724)	0.00424 (0.0657)	<b>Economic Disadvantage (FRL)</b>	0.00243 (0.0749)	-0.139 ** (0.0619)
<b>African American</b>	-0.0809 (0.0751)	-0.136 ** (0.0683)	<b>African American</b>	-0.00853 (0.0836)	0.0332 (0.0595)
<b>Hispanic</b>	-0.437 (0.271)	-0.34 ** (0.161)	<b>Hispanic</b>	0.0977 (0.177)	0.0632 (0.136)
<b>Other Non-White Race</b>	0.0215 (0.163)	-0.0136 (0.113)	<b>Other Non-White Race</b>	0.0998 (0.160)	0.104 (0.0834)
<b>Female</b>	-0.0803 (0.0660)	0.00970 (0.0603)	<b>Female</b>	0.128 ** (0.0604)	0.188 *** (0.0523)
<b>Prior Year Literacy Z-Score</b>	0.220 *** (0.0547)	0.24 *** (0.0491)	<b>Prior Year Math Z-Score</b>	0.197 *** (0.0488)	0.143 *** (0.0460)
<b>Switched Schools</b>	-0.0908 (0.0733)	-0.113 * (0.0632)	<b>Switched Schools</b>	-0.0334 (0.0673)	-0.117 ** (0.0524)
<b>Constant</b>	0.160 ** (0.0714)	0.0880 (0.0630)	<b>Constant</b>	0.0973 (0.0725)	-0.0242 (0.0541)
<b>Observations</b>	244	330	<b>Observations</b>	272	406
<b>Adjusted R<sup>2</sup></b>	0.648	0.675	<b>Adjusted R<sup>2</sup></b>	0.575	0.647
*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level			*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level		

ARKANSAS CHARTER SCHOOL PROGRAM EVALUATION

<b>Table E29. Academic Effect of Little Rock Preparatory Academy in Math Benchmarks, 2012-14</b>	<b>2012-13</b>	<b>2013-14</b>	<b>Table E30. Academic Effect of Little Rock Preparatory Academy in Literacy Benchmarks, 2012-14</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Charter Effect</b>	<b>0.141</b> *	<b>-0.0385</b>	<b>Charter Effect</b>	<b>0.0108</b>	<b>-0.0672</b>
	<b>(0.0789)</b>	<b>(0.0646)</b>		<b>(0.0780)</b>	<b>(0.0697)</b>
<b>Prior Year Math Z-Score</b>	0.697 ***	0.631 ***	<b>Prior Year Literacy Z-Score</b>	0.715 ***	0.678 ***
	(0.0805)	(0.0619)		(0.0661)	(0.0523)
<b>Economic Disadvantage (FRL)</b>	0.00981	0.0853	<b>Economic Disadvantage (FRL)</b>	-0.0600	-0.0500
	(0.0897)	(0.0940)		(0.0798)	(0.0845)
<b>African American</b>	-0.503	0.0513	<b>African American</b>	0.596 ***	-0.196
	(0.343)	(0.241)		(0.104)	(0.137)
<b>Hispanic</b>	-0.357	-0.0435	<b>Hispanic</b>	0.541 **	
	(0.392)	(0.284)		(0.219)	
<b>Other Non-White Race</b>	-0.615 *	0.0958	<b>Other Non-White Race</b>		-0.119
	(0.354)	(0.314)			(0.162)
<b>Female</b>	0.00279	-0.0859	<b>Female</b>	0.0855	0.0955
	(0.0789)	(0.0667)		(0.0768)	(0.0714)
<b>Prior Year Literacy Z-Score</b>	0.265 ***	0.275 ***	<b>Prior Year Math Z-Score</b>	0.121 *	0.21 ***
	(0.0677)	(0.0585)		(0.0715)	(0.0549)
<b>Switched Schools</b>	-0.0714	-0.242 ***	<b>Switched Schools</b>	-0.140 *	0.00776
	(0.0791)	(0.0637)		(0.0783)	(0.0714)
<b>Constant</b>	0.478	-0.0224	<b>Constant</b>	-0.548 ***	0.181
	(0.341)	(0.232)		(0.102)	(0.160)
<b>Observations</b>	208	244	<b>Observations</b>	208	248
<b>Adjusted R<sup>2</sup></b>	0.687	0.680	<b>Adjusted R<sup>2</sup></b>	0.691	0.682
*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level			*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level		

**Appendix F: School-by-School Academic Effect Comparison, Lottery Waitlist-Matching to Charter-TPS Matching, 2012-14**

**Table F1.** Academic Effects of **Academics Plus**, 2012-14

	2012-13		2013-14	
	Waitlist Matching	TPS Matching	Waitlist Matching	TPS Matching
Reading	0.02	0.04	Reading	0.00
Math	-0.02	0.05	Math	0.11 *
Reading n=	330	416	Reading n=	344
Math n=	286	418	Math n=	308

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table F2.** Academic Effects of **Covenant Keepers**, 2012-14

	2012-13		2013-14	
	Waitlist Matching	TPS Matching	Waitlist Matching	TPS Matching
Reading	-0.02	0.11	Reading	-0.01
Math	-0.06	0.05	Math	-0.08
Reading n=	112	148	Reading n=	168
Math n=	94	162	Math n=	202

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table F3.** Academic Effects of **eStem Elementary**, 2012-14

	2012-13		2013-14	
	Waitlist Matching	TPS Matching	Waitlist Matching	TPS Matching
Reading	-0.01	N/A	Reading	-0.15
Math	0.39 ***	N/A	Math	0.26 **
Reading n=	142	-	Reading n=	148
Math n=	134	-	Math n=	136

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

There is no TPS comparison as the 3-Year Matching Study did not report eSTEM results by school.

**Table F4.** Academic Effects of **eStem Middle School**, 2012-14

	2012-13		2013-14	
	Waitlist Matching	TPS Matching	Waitlist Matching	TPS Matching
Reading	0.08 *	N/A	Reading	0.13 **
Math	-0.02	N/A	Math	0.04
Reading n=	342	-	Reading n=	662
Math n=	310	-	Math n=	558

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

There is no TPS comparison as the 3-Year Matching Study did not report eSTEM results by school.

**Table F5. Academic Effects of Jacksonville Lighthouse, 2012-14**

2012-13			2013-14		
	Waitlist Matching	TPS Matching		Waitlist Matching	TPS Matching
Reading	0.03	0.13 ***	Reading	-0.09 *	0.03
Math	0.09 *	0.14 ***	Math	0.00	0.10 ***
Reading n=	378	752	Reading n=	392	776
Math n=	338	758	Math n=	354	798

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table F6. Academic Effects of KIPP Blytheville, 2012-14**

2012-13			2013-14		
	Waitlist Matching	TPS Matching		Waitlist Matching	TPS Matching
Reading	0.12	0.24 ***	Reading	0.25 *	0.06
Math	0.18	0.11 *	Math	0.18	0.13 **
Reading n=	60	246	Reading n=	98	276
Math n=	40	246	Math n=	108	298

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table F7. Academic Effects of KIPP Delta Helena, 2012-14**

2012-13			2013-14		
	Waitlist Matching	TPS Matching		Waitlist Matching	TPS Matching
Reading	0.08	0.14 ***	Reading	0.19 *	0.25 ***
Math	0.21 **	0.10 *	Math	-0.08	-0.14 ***
Reading n=	176	490	Reading n=	138	370
Math n=	138	520	Math n=	142	430

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table F8. Academic Effects of LISA Academy (Main), 2012-14**

2012-13			2013-14		
	Waitlist Matching	TPS Matching		Waitlist Matching	TPS Matching
Reading	0.19 ***	0.06	Reading	-0.01	-0.07 **
Math	-0.02	0.00	Math	0.01	0.05
Reading n=	482	746	Reading n=	534	728
Math n=	412	744	Math n=	444	716

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table F9.** Academic Effects of **LISA Academy North Little Rock**, 2012-14

	<b>2012-13</b>		<b>2013-14</b>	
	<b>Waitlist Matching</b>	<b>TPS Matching</b>	<b>Waitlist Matching</b>	<b>TPS Matching</b>
Reading	-0.22 ***	-0.01	Reading	-0.03
Math	-0.01	0.17 ***	Math	-0.04
<i>Reading n=</i>	272	356	<i>Reading n=</i>	406
<i>Math n=</i>	244	348	<i>Math n=</i>	480

*Note:* \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table F10.** Academic Effects of **Little Rock Preparatory Academy**, 2012-14

	<b>2012-13</b>		<b>2013-14</b>	
	<b>Waitlist Matching</b>	<b>TPS Matching</b>	<b>Waitlist Matching</b>	<b>TPS Matching</b>
Reading	0.01	0.05	Reading	-0.07
Math	0.14 *	0.14 **	Math	-0.04
<i>Reading n=</i>	208	238	<i>Reading n=</i>	248
<i>Math n=</i>	208	240	<i>Math n=</i>	282

*Note:* \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**SECTION 2: HOW SATISFIED ARE PARENTS WITH CHARTER  
SCHOOLS?**

Office for Education Policy  
University of Arkansas

**ARKANSAS CHARTER SCHOOL EVALUATION:  
PARENT SATISFACTION SURVEY  
SCHOOL YEAR 2015-16**

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**April 7, 2016**

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## Introduction

This portion of the Arkansas charter school evaluation examines parent satisfaction for those parents and guardians who have chosen to enroll their child in one of the two charter school sectors: open-enrollment and district conversion charter schools.

The survey was administered in the fall of 2015 using both paper-and-pencil and electronic formats. While similar to previous versions of satisfaction surveys used in Arkansas, the most recent version looked to more accurately gauge parent satisfaction on a variety of school characteristics and asked parents to compare their charter school to their child's previous school. The satisfaction survey was provided to all open-enrollment and district conversion charter school leaders with a request to share the survey with all parents at the school and ensure anonymity for respondents.

In this research, we provide a description of self-reported levels of satisfaction for parents who have children enrolled in an Arkansas charter school. This includes parents who have chosen an open-enrollment charter school and those who live within the catchment area of a district conversion charter school. We have asked a variety of questions on which parents have reported their satisfaction and additional questions to gauge parental involvement and perceptions of school quality at the local and state level.

Additionally, we have the opportunity to compare the satisfaction of parents in open-enrollment charter schools with that of parents in district conversion charters. By doing so, we hope to see if there are differences in levels of satisfaction for parents who have the opportunity to choose their school. Parents with children in open-enrollment charter schools all have had an active school choice. A majority of district conversion charter school parents, in contrast, enroll their children in the charter school simply because they live within the school's catchment area. Because of this essential difference between open-enrollment and district conversion charter parents, we focus on answering three questions about parent satisfaction in Arkansas charter schools. To do so, we compare survey responses that answer these question from open-enrollment parents to district conversion parents: 1) What motivates parents to choose charter schools? 2) What is different about chosen charter schools in comparison to previous schools? 3) How satisfied are parents with their chosen charter schools?

When comparing responses of parents in both charter school sectors, the surveys show that open-enrollment charter school parents expressed some level of dissatisfaction with their local schools and these parents are willing to travel further to get to a school they believe offers better academics. Open-enrollment parents are either satisfied or very satisfied with a majority of school characteristics, whereas district conversion parents are typically merely satisfied with their school. For the parents who have a prior school to compare their child's charter to, open-enrollment parents believe that their chosen school is better and district conversion parents believe their charter school is the same as their previous school, which may have been the same school prior to its conversion to a charter.

The remainder of this report is organized in five sections. The first section reports pertinent information about the parents who responded to the survey. The second section examines parents'

responses to questions that pertain to parents’ motivations to choose their current charter school. The third section examines parents’ levels of satisfaction with their chosen charter school versus their child’s previous school. The fifth section reports parents’ levels of satisfaction with their chosen charter school. The final section concludes the report.

### Response Rates and Demographics

In order to measure parent satisfaction, we created a survey that was administered to both open-enrollment and district conversion charter school parents. We asked each parent to respond with reference to a specific child of theirs who is a student in a charter school. We have received responses from nearly 2,600 parents who have enrolled their children in Arkansas’s charter schools, representing an overall survey response rate of 11 percent. Students whose parents responded to this survey were relatively evenly distributed across grade levels, with a slightly higher concentration in middle school grades for open-enrollment parents and high school grades for district conversion parents. Table 1 below shows the response rates by grade level and school type and Table 2 shows the grade composition of the sample of respondents.

**Table 1: Response Rates by Grade and Charter Type**

<b>Grade</b>	<b>OE Number of Responses</b>	<b>OE Response Rate</b>	<b>DC Number of Responses</b>	<b>DC Response Rate</b>
Kindergarten	124	14.3%	4	2.2%
1	145	17.4%	5	2.7%
2	176	22.9%	6	3.1%
3	152	17.7%	3	1.8%
4	149	18.1%	8	4.2%
5	159	18.6%	11	3.1%
6	249	20.8%	20	5.1%
7	303	22.2%	26	6.9%
8	270	21.0%	23	4.7%
9	182	17.0%	61	4.0%
10	121	13.7%	53	2.1%
11	120	17.8%	75	3.0%
12	78	14.4%	64	2.6%

*Note: Response rates given are total respondents in each charter school sector divided by total enrollment of students in the corresponding grade in the corresponding charter school sector. Not all respondents provided their child’s grade level, leaving our response rate for this question below the overall survey response rate.*

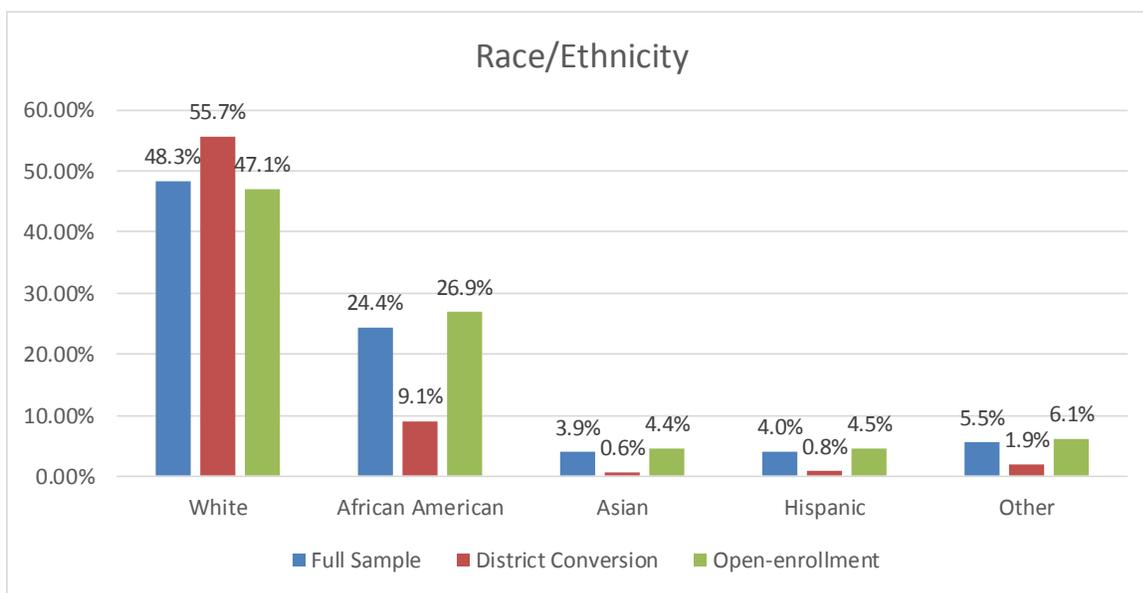
**Table 2:** Respondents’ Grade Composition by Charter Type

Grade	Total	Percent	OE	Percent	DC	Percent
Kindergarten	128	4.9%	124	5.6%	4	1.1%
1	150	5.8%	145	6.5%	5	1.4%
2	182	7.0%	176	7.9%	6	1.7%
3	155	6.0%	152	6.8%	3	0.8%
4	157	6.1%	149	6.7%	8	2.2%
5	170	6.6%	159	7.1%	11	3.1%
6	269	10.4%	249	11.2%	20	5.6%
7	329	12.7%	303	13.6%	26	7.2%
8	293	11.3%	270	12.1%	23	6.4%
9	243	9.4%	182	8.2%	61	17.0%
10	174	6.7%	121	5.4%	53	14.8%
11	195	7.5%	120	5.4%	75	20.9%
12	142	5.5%	78	3.5%	64	17.8%

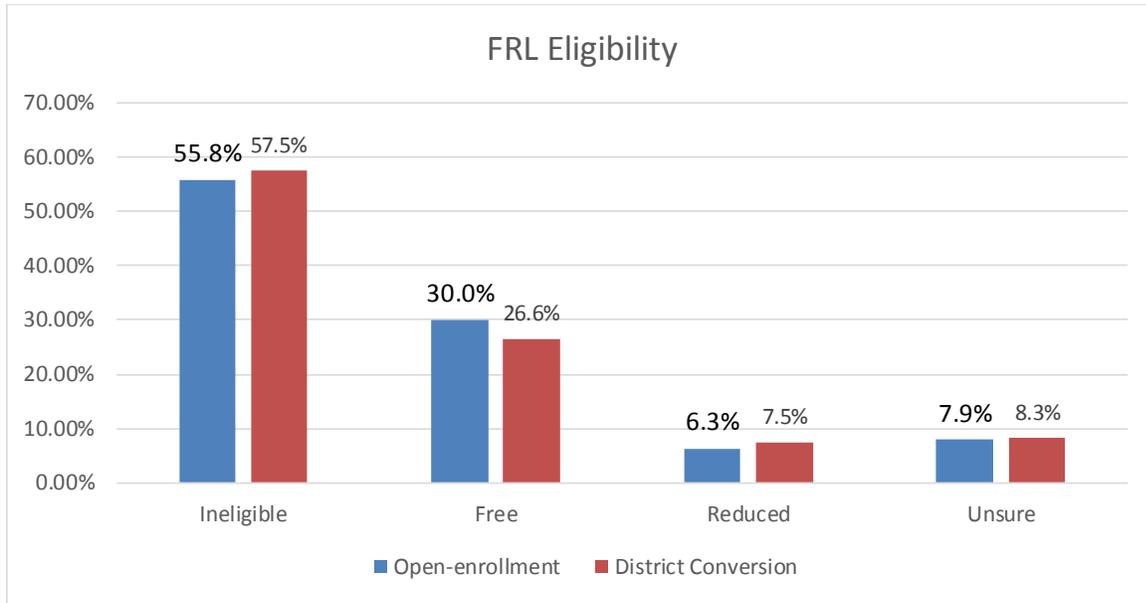
Of parents who responded, 86 percent enroll their children in Open-enrollment charter schools and 14 percent enroll in District Conversion charter schools. Eleven percent of District Conversion parents have multiple children currently enrolled in their charter school and 19 percent of Open-enrollment parents have multiple children currently enrolled in their chosen charter school.

A majority of parent respondents are white and ineligible for the Free/Reduced Lunch program. A vast majority of parents in both charter school sectors reported that their child does not have a learning disability. A majority of parents who responded reported that they had a college degree or more. Demographic information for parents is reported in Figures 1, 2, 3, and 4.

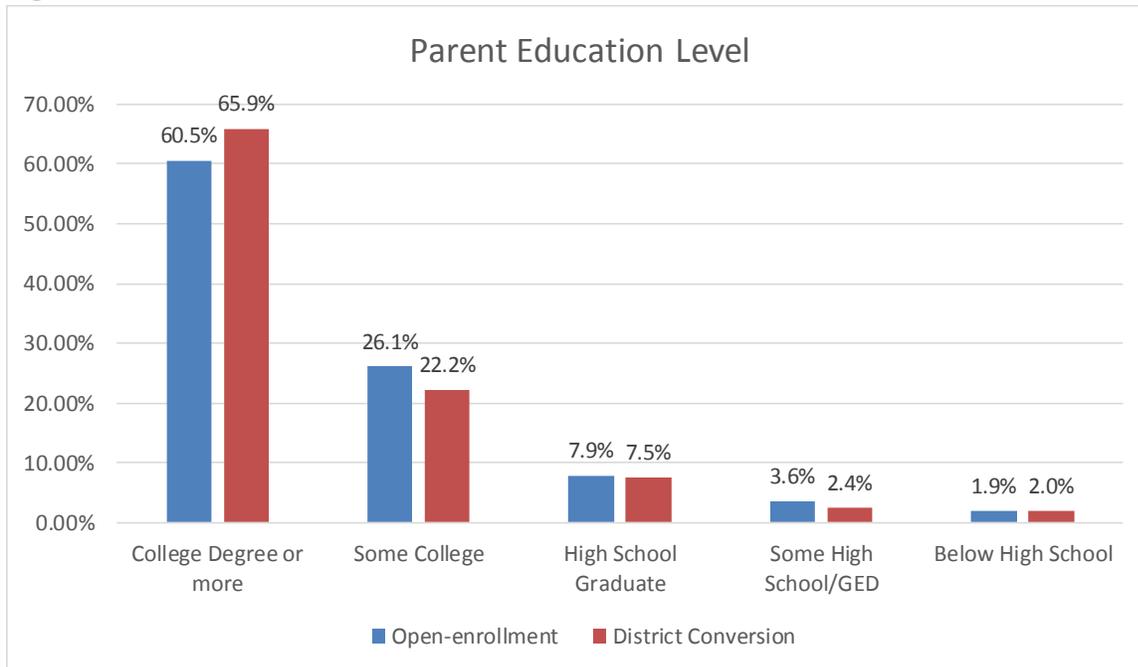
**Figure 1:** Parents’ Race/Ethnicity



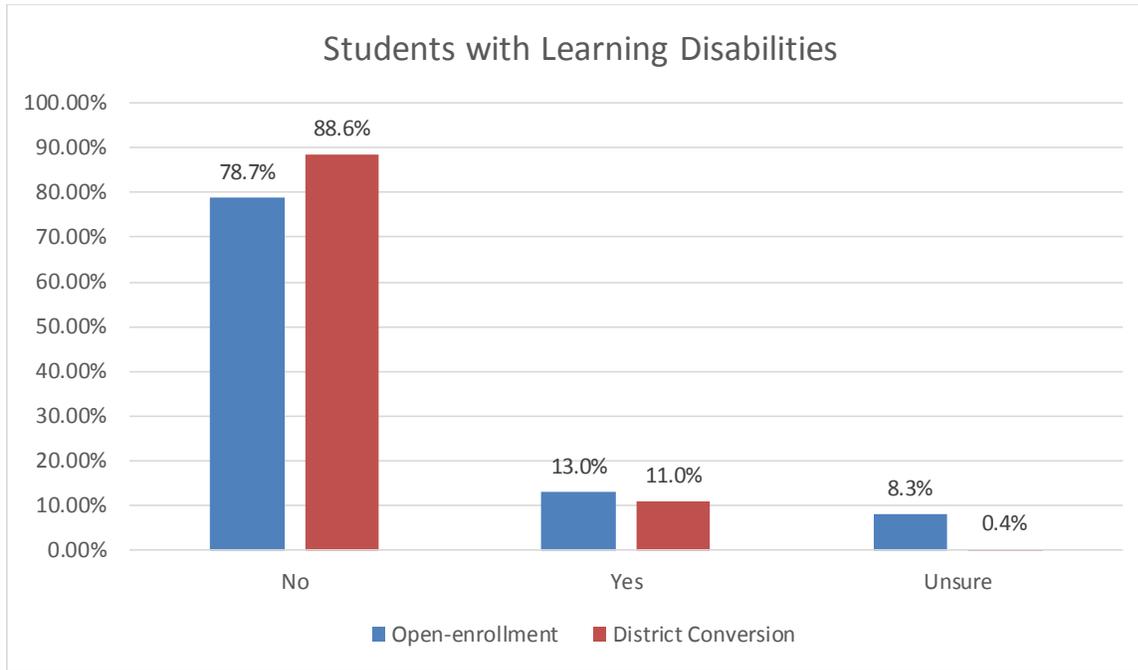
**Figure 2: FRL Eligibility**



**Figure 3: Parents' Education Level**



**Figure 4:** Percent of Students with Learning Disabilities



When asked how parents heard about their chosen charter school, a majority of Open-enrollment parents listed friends or relatives and Internet searches (Table 3). Most District Conversion parents enroll their child in the charter school because they live within the school’s catchment area, meaning it is the assigned school they would attend, no matter if it is a traditional public school or a District Conversion charter school.

**Table 3:** How Did Open-enrollment Parents Hear About Their Charter School?

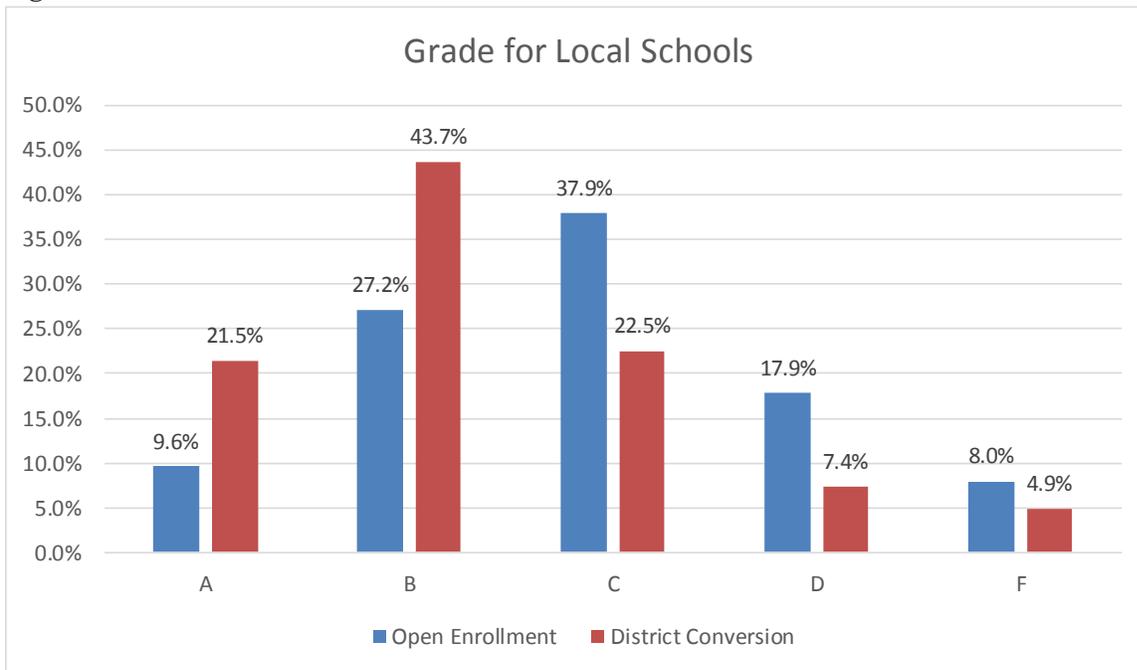
	Open-enrollment	Percent
Friends or relatives	1,416	63.4%
Internet	467	20.9%
Flyers/Brochures	235	10.5%
Newspaper/Magazine	228	10.2%
Television/Radio	177	7.9%
Community events	147	6.6%
Church	83	3.7%
Home visit	47	2.1%
Community center	45	2.0%
Other charter schools	40	1.8%
Call from school	38	1.7%

### What Motivates Parents to Choose Charter Schools?

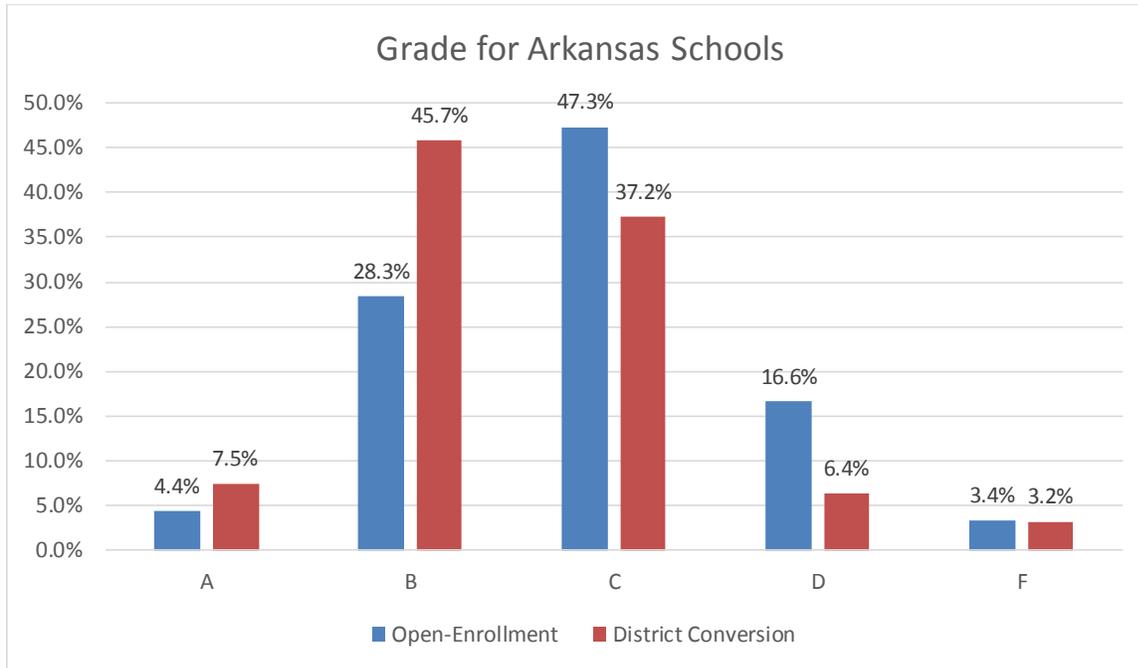
Our survey asked a variety of questions designed to understand what motivates parents to choose a public charter school. A potential explanation for parents choosing to enroll their child in an open-enrollment charter school is some level of dissatisfaction with their assigned traditional public school. To measure this, we asked parents to grade their local schools on an A-F scale, which allowed us to create a “GPA” (Figure 5). Most parents (38 percent) enrolling their child in an open-enrollment charter school gave their local schools a C grade. The GPA for schools in the surrounding area for open-enrollment parents is a 2.14, which is slightly above a C. Comparatively, roughly 44 percent of district conversion parents gave their local schools a B grade and a GPA of 2.69, which is a high C. Higher percentages of open-enrollment parents gave their local schools either a D or F than district conversion parents. Based on the grades open-enrollment parents gave their local traditional public schools, it is apparent there was some level of dissatisfaction that led them to choose an alternative to the surrounding school.

Additionally, parents were asked to grade Arkansas schools in general. Similar to parents’ grades for local schools, open-enrollment parents gave Arkansas schools a grade slightly above a C (2.15). However, district conversion parents were more likely to give schools statewide a lower grade (2.48).

**Figure 5: Parents Grades for Local Schools**



**Figure 6:** Parents’ Grades for Arkansas Schools



As shown above, we can see that open-enrollment parents had some level of dissatisfaction that inspired them to choose a charter school. We asked parents to provide all of the reasons for why they chose the school in which they enroll their children (Table 4). An overwhelming majority of parents enrolling their children in open-enrollment charter schools cited reasons of higher academic quality in their chosen school. This included higher teacher quality (50 percent), a better curriculum (68 percent), and a more challenging curriculum at the chosen school (62 percent). For parents who enroll their children in a district conversion charter school, the most popular reason being it is their child’s first school (25 percent). District conversion parents also stated that their school is in a convenient location, which intuitively makes sense, as district conversion charters use a catchment area for students to attend.

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**Table 4: Why Parents Chose Their Charter School**

	<b>Total</b>	<b>OE</b>	<b>DC</b>
Better curriculum at this school	61.0%	67.9%	18.5%
More challenging curriculum	55.1%	61.8%	13.5%
Higher teacher quality	44.9%	49.7%	14.9%
Safer school environment	42.2%	47.3%	10.7%
Smaller school	34.5%	38.3%	11.0%
School was in a convenient location	26.3%	27.2%	20.7%
Wanted all children to be in same school	16.5%	18.1%	6.6%
School did not meet child's needs	12.2%	13.8%	1.9%
This is my child's first school	15.1%	13.5%	24.8%
Child was not comfortable at school	12.0%	13.4%	3.3%
This school is less expensive	8.8%	9.7%	3.3%
Next grade level not offered	2.6%	2.8%	1.4%
School closed	1.8%	1.9%	1.7%
Moved away	2.3%	1.9%	4.7%
Child was asked not to return	0.7%	0.7%	0.3%
Suspension or expulsion	0.7%	0.6%	1.1%
<b>Number of Respondents</b>	2,597	2,234	363

The survey asked parents to list the single most important reason they chose the school they did (Table 5). For open-enrollment parents, the most important reasons are a more challenging curriculum and a better curriculum at their chosen school, opinions generally shared by district conversion parents who were given the chance to choose their school. The second most popular reason for the school choice of district conversion parents is that their charter school was their child's first school.

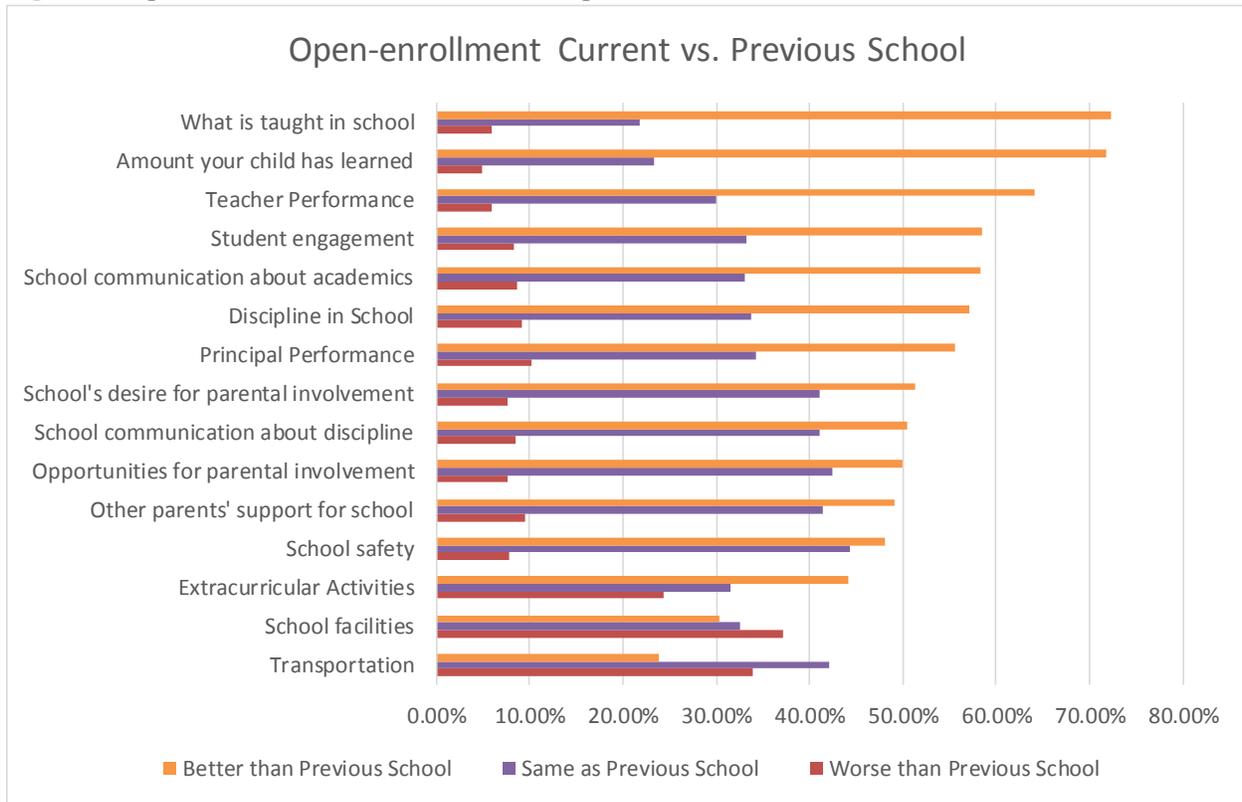
**Table 5: Most Important Reason Parents Chose Their Charter School**

	<b>Total</b>	<b>OE</b>		<b>DC</b>	
Better curriculum at this school	552	493	27.4%	59	21.4%
More challenging curriculum	515	491	27.3%	24	8.7%
Safer school environment	250	233	13.0%	17	6.2%
Higher teacher quality	243	206	11.5%	37	13.4%
Smaller school	110	97	5.4%	13	4.7%
This is my child's first school	81	30	1.7%	51	18.5%
School did not meet child's needs	70	66	3.7%	4	1.5%
Child was not comfortable at school	59	54	3.0%	5	1.8%
Wanted all children to be in same school	53	40	2.2%	13	4.7%
School was in a convenient location	71	36	2.0%	35	12.7%
This school is less expensive	13	13	0.7%	0	0.0%
School closed	11	7	0.4%	4	1.5%
Next grade level not offered	8	6	0.3%	2	0.7%
Moved away	14	4	0.2%	10	3.6%
Child was asked not to return	2	1	0.1%	1	0.4%
Suspension or expulsion	1	0	0.0%	1	0.4%

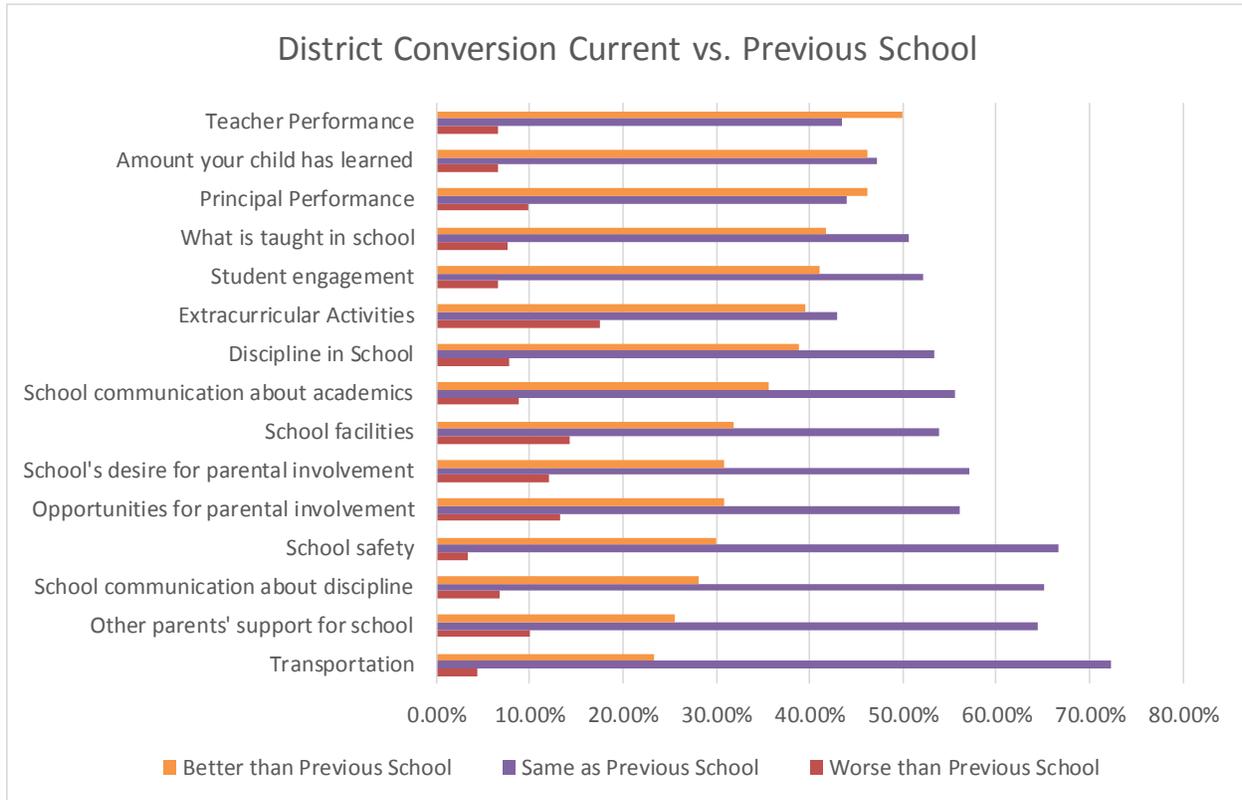
### What is Different about Chosen Charter Schools Compared to Previous Schools?

While not every respondent has enrolled their child in a school other than their current charter school, 49 percent of open-enrollment parents and 26 percent of district conversion parents have enrolled their child in a different school prior to their current charter school. With this in mind, we asked parents to compare their current school to their previous school on the 15 different school characteristics that also were the basis for their school satisfaction ratings (Figures 6 and 7). Open-enrollment parents said that their current school is better than their previous school on 13 of the 15 characteristics, the exceptions being “Transportation”, which parents rated the same as their previous school, and “School facilities”, which parents said are worse than their previous school. Comparatively, district conversion parents who have enrolled their children in a school other than their current school said that their current school is better than their previous school on only 2 of the 15 school qualities, “Principal performance” and “Teacher performance”. The remaining school qualities were rated the same as their previous school by district conversion parents.

**Figure 7:** Open-enrollment Charter School Perceptions vs. Previous School



**Figure 8:** District Conversion Charter School Perceptions vs. Previous School

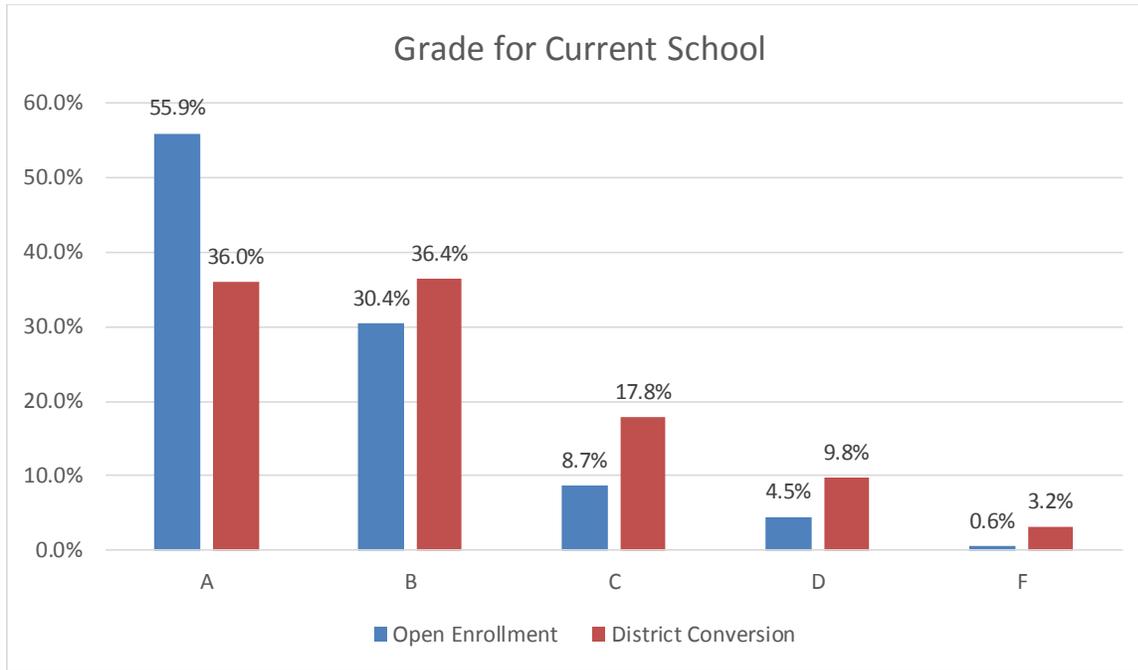


### How Satisfied are Parents with Their Chosen School?

Perhaps the most important question asked is “How satisfied are parents with their chosen school?” This was the main focus of the survey and it contained a variety of questions designed to understand parent satisfaction. Of the district conversion parents who responded, 44 percent have enrolled more than one child in the charter school. Comparatively, 51 percent of open-enrollment parents are “repeat customers” for their school of choice. Enrolling multiple children in the same school is a signal of some level of satisfaction, as parents who were unhappy with a previous choice are less likely to enroll a second child in the same school if they have schooling options.

In order to measure satisfaction with charter schools, parents were asked to grade their current school in which they enroll their child, teachers at their school, and the principal at their school. Parents provided a grade on an A-F scale, which lends itself to creating a “GPA” of current school satisfaction (Figure 9). For current schools, 55 percent of open-enrollment parents gave their current school an A, compared to 36 percent of district conversion parents. Open-enrollment parents’ grading of their current school resulted in a GPA of 3.37, a strong B. District conversion parents’ current school GPA is 2.95, just slightly below a B.

**Figure 9:** Charter School Parents’ Grade for Their Current School



Parents were also asked to grade the teachers and principal at their current school on the same A-F grade scale. The GPA for current teachers at both Open-enrollment and District Conversion charter schools is a B, 3.41 and 3.20 respectively (Figure 10). It is a similar story for principals, with Open-enrollment charter parents giving their principals a B (3.27) and District Conversion parents giving their principals a B (3.06) (Figure 11).

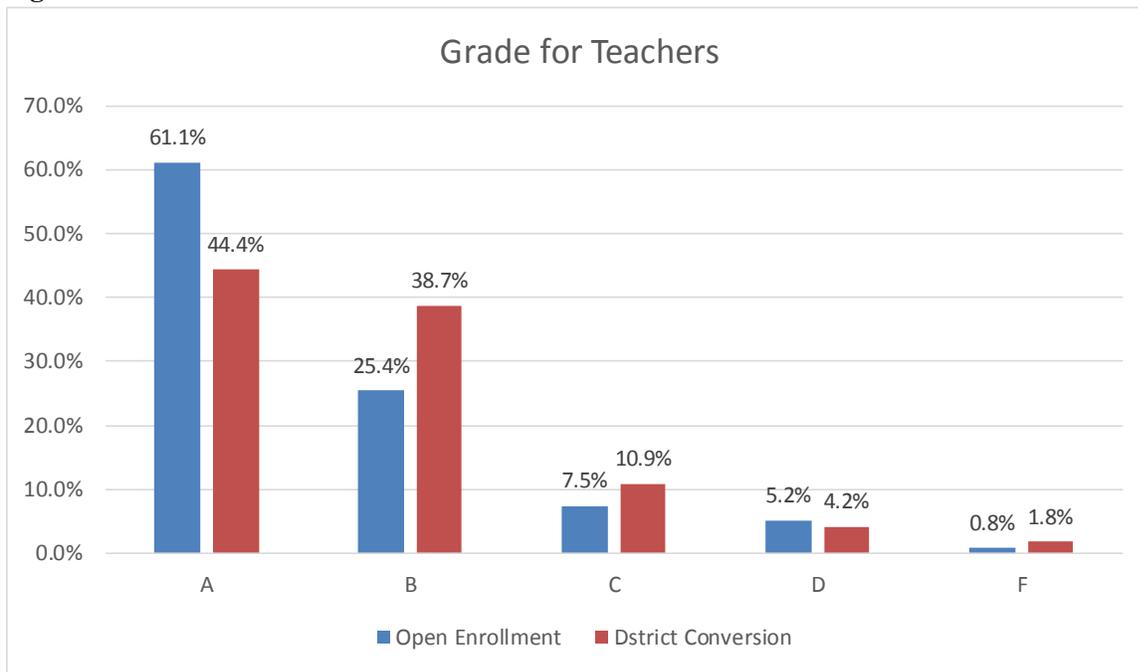
**Table 6:** Grades for Local and Arkansas Schools Given Parents’ Grades for Current School

Grade for Current School	Open-enrollment		District Conversion	
	Grade for Local Schools	Grade for Arkansas Schools	Grade for Local Schools	Grade for Arkansas Schools
A	2.27	2.25	3.44	2.93
B	1.90	1.98	2.74	2.55
C	2.02	2.01	2.00	1.84
D	2.38	2.34	1.33	1.72
F	1.67	1.83	0.44	1.56

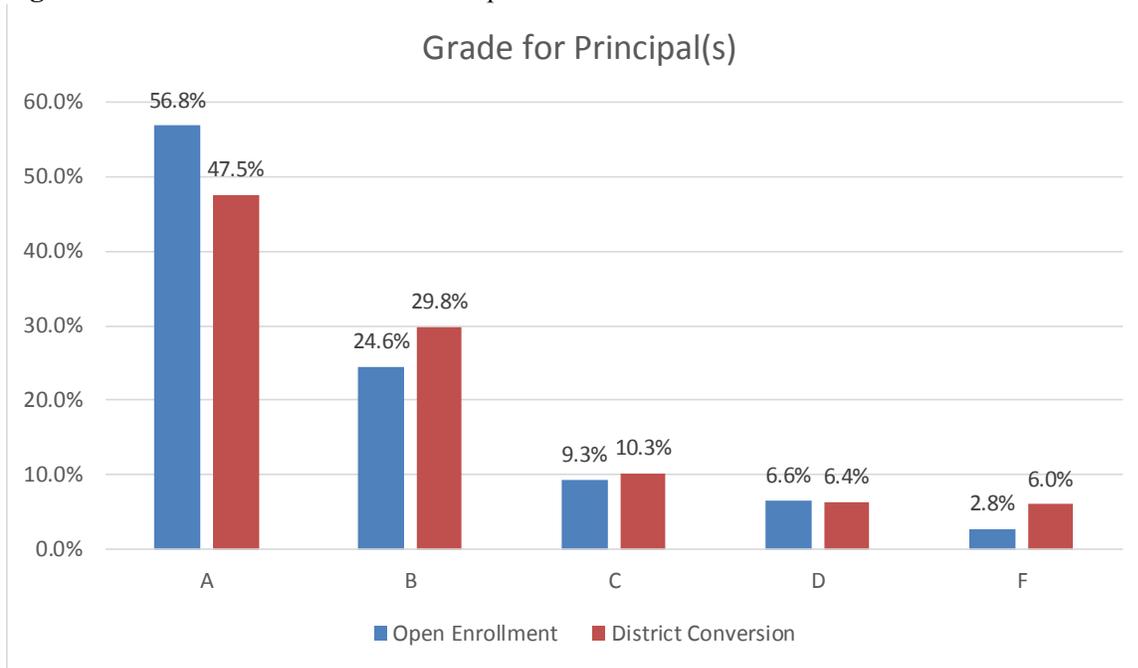
Table 6 above shows the GPA for Local and Arkansas schools given the grade parents gave to their current charter school. As we can see, Open-enrollment parents who gave their current school an A, gave an average grade of C for both Local and Arkansas schools. On the other hand, District Conversion parents who gave their local school an A gave an average grade of a high B/low A to their local school and a high C to Arkansas schools. Intuitively, this makes sense for the local school grade for both sets of

parents, as Open-enrollment parents have expressed some level of dissatisfaction with their local schools and District Conversion parents gave higher grades to their local schools as most District Conversion charter schools are the local school. As parents gave lower grades to their current schools, they gave lower grades to both their local schools and Arkansas schools.

**Figure 10:** Parents’ Grades for the Teachers in their Charter School

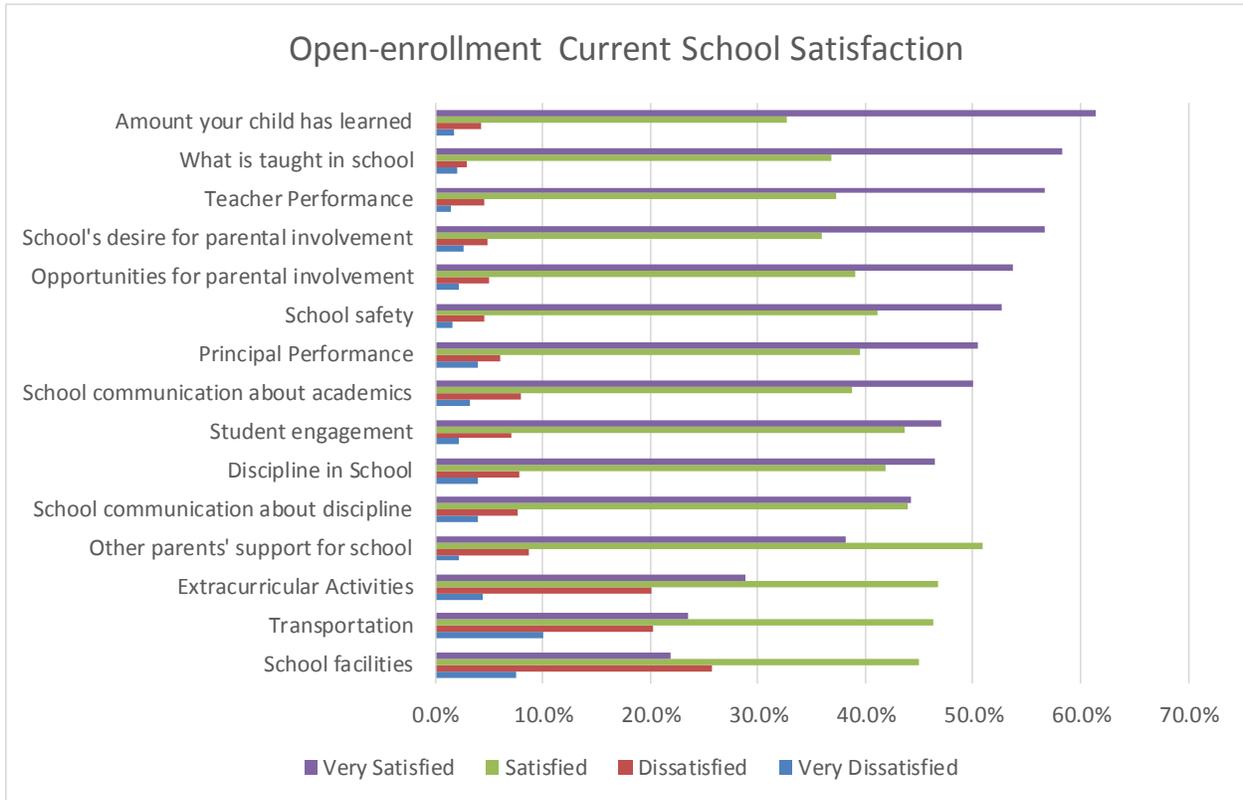


**Figure 11:** Parents’ Grades for the Principal in their Charter School

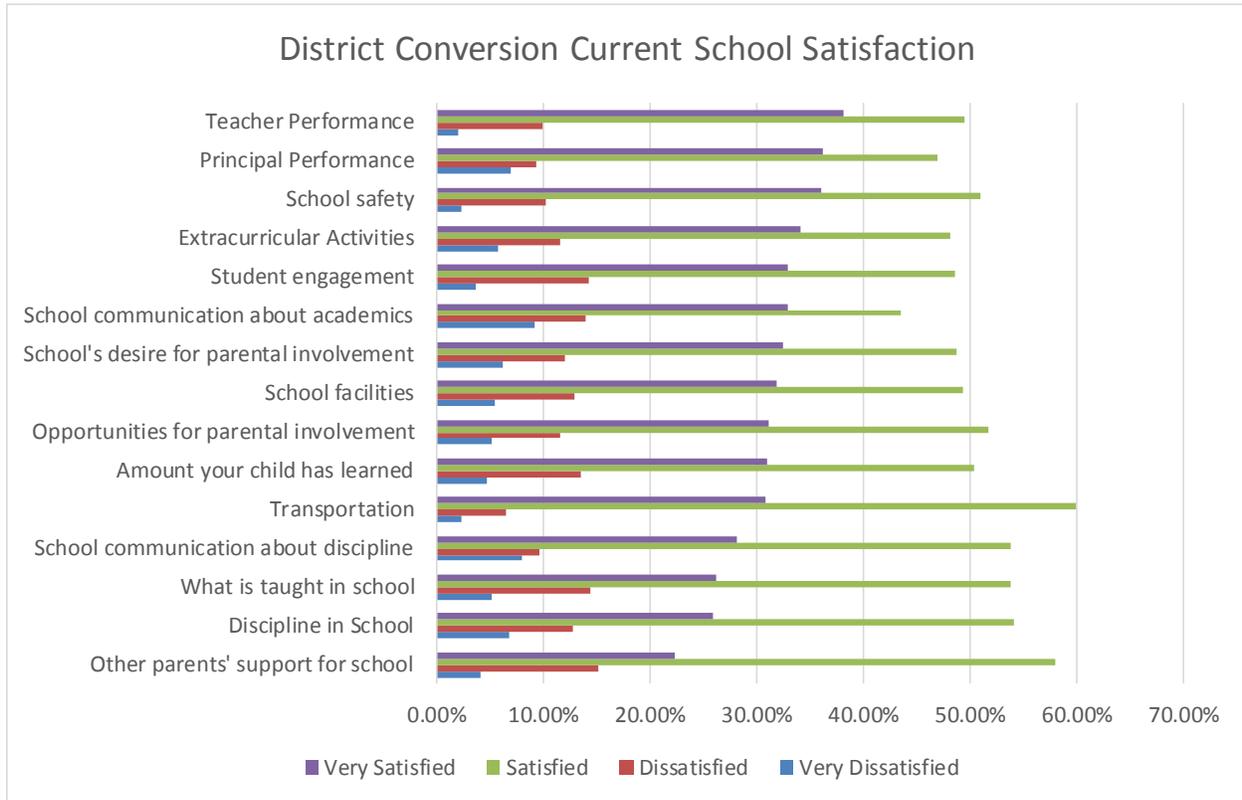


Parents appear to be satisfied with their schools in general, as well as the teachers and leaders of their schools. However, parents were also asked to rate their levels of satisfaction for 15 school characteristics, ranging from “Very Dissatisfied” to “Very Satisfied”. Overall, open-enrollment parents were mostly satisfied with the various aspects of the school they have chosen (Figure 12). There were more aspects of their school with which they would say they are “very satisfied”. District conversion parents are also satisfied with most aspects of their school, but were less likely to say they are “very satisfied” (Figure 13). There were no aspects of district conversion schools about which a majority of responding parents said they were “very satisfied”. In contrast, a majority of open-enrollment parents said they were “very satisfied” with 6 of the 15 school characteristics.

**Figure 12:** Open-enrollment Parents' Satisfaction with their Charter School Characteristics



**Figure 13:** District Conversion Parents’ Satisfaction with their Charter School Characteristics



An indirect measure of parent satisfaction (or dissatisfaction) is the distance parents are willing to travel to their current school. This is an important measure, as 27 percent of Open-enrollment parents and nearly 21 percent of District Conversion parents said they chose their current school because it was in a convenient location. The survey asked parents to estimate how long it took to travel to their current school and how long it would take to travel to the traditional public school their child would attend if they were not in a public charter school (Table 7). A majority of District Conversion parents (56 percent) said it takes 10 minutes or less, with an additional 32 percent saying it took 11-20 minutes to travel to their charter school. On the other hand, only 36 percent of Open-enrollment parents said it takes 10 minutes or less to travel to their charter school, whereas 40 percent said it takes 11-20 minutes and 15 percent travel 21-30 minutes.

**Table 7:** Parents’ Travel Time to Their Charter School

<b>Time to travel to charter school</b>					
	<b>Total</b>	<b>OE</b>		<b>DC</b>	
0-10 minutes	922	720	35.9%	202	56.3%
11-20 minutes	908	795	39.7%	113	31.5%
21-30 minutes	341	308	15.4%	33	9.2%
31-45 minutes	130	123	6.1%	7	2.0%
46-60 minutes	52	49	2.4%	3	0.8%
More than 1 hour	11	10	0.5%	1	0.3%
	2,364	2,005		359	

In order to understand if parents were choosing a charter school that may be closer to home, we asked how long it would take to travel to their assigned public school. A majority of parents enrolling their children in open-enrollment charter schools say that it would take 10 minutes or less to travel to their local assigned public school (Table 8). If these self-reported travel times are accurate, then parents enrolling their children in open-enrollment charter schools are willing to sacrifice convenience for the opportunity for their children to attend their school of choice.

**Table 8:** Parents’ Travel Time to Their Local Assigned Public School

<b>Time to travel to local public school</b>					
	<b>Total</b>	<b>OE</b>		<b>DC</b>	
0-10 minutes	1317	1,154	52.2%	163	46.3%
11-20 minutes	831	717	32.4%	114	32.4%
21-30 minutes	299	249	11.3%	50	14.2%
31-45 minutes	89	74	3.3%	15	4.3%
46-60 minutes	18	11	0.5%	7	2.0%
More than 1 hour	11	8	0.4%	3	0.9%
	2,565	2,213		352	

## Conclusion

This report offers the results of the Arkansas charter school parent satisfaction survey administered during the 2015-16 school year. Per the requirements of the Arkansas Department of Education, we made our survey available to all charter school parents. This included District Conversion charter schools as well as Open-enrollment charter schools. After receiving response from nearly 2,600 parents, we focused on answering three questions to examine the satisfaction levels for parents in Arkansas charter schools: 1) What motivates parents to choose charter schools? 2) What is different about chosen charter schools in comparison to previous schools? 3) How satisfied are parents with their chosen charter schools?

In short, parents in Arkansas charter schools are satisfied with their schools and the education provided to their children. However, we do see some differences across charter school sectors.

1) What motivates parents to choose charter schools?

- Parents in Open-enrollment charters expressed some level of dissatisfaction with their local schools
- Open-enrollment parents listed a better/more rigorous curriculum, safer environment, and higher teacher quality as the most important reasons for choosing their school
- District Conversion parents listed better curriculum, higher teacher quality, and this school being their child’s first school as the most important reasons

Just under half of open-enrollment parents and roughly a quarter of district conversion parents who responded had enrolled their child in a different school prior to their current charter school. Those parent provided a comparison of their current school to their previous school and answered our second research question:

2) What is different about chosen charter schools in comparison to previous schools?

- Open-enrollment parents believe their new school is better than their previous school on 13 of 15 school characteristics.
  - Facilities were worse than previous school and Transportation was the same as their previous school
- District Conversion parents believe their new school is the same as their previous school on 13 of 15 characteristics
  - Teacher performance and Principal performance are two categories District Conversion parents believe is better than their previous school

For the purposes of this study, Question 3 is the most pertinent. This question drove our research and was the over-arching theme of the survey. We asked:

3) How satisfied are parents with their chosen charter schools?

- Just over half of Open-enrollment parents are “repeat customers” at their chosen school
- Forty-four percent of District Conversion parents have enrolled multiple children in their school
- Fifty-five percent of Open-enrollment parents gave their current school an A grade and an average GPA of 3.37
- Thirty-six percent of District Conversion parents gave their current school an A
  - An equal percentage of parents gave their school a B
  - The overall GPA for District conversion schools is 2.95
- Open-enrollment parents state they are “very satisfied” with 11 of the 15 school characteristics
  - Open-enrollment parents state they are “satisfied” with the 4 remaining characteristics
- District Conversion parents state they are “satisfied” with all 15 school characteristics

As we can see, charter school parents in Arkansas are satisfied with their schools overall, giving them high grades and stating they are at least satisfied with the school characteristics we included in our survey. However, not all parents in Arkansas enrolling their children in charter schools are afforded the opportunity to choose their charter school. A majority of district conversion charter schools do not offer parents the choice to enroll their children in the charter school. Instead, a majority of district conversion charter school parents are required to enroll their children in a charter school based on location alone.

Open-enrollment parents have exercised their autonomy to choose a school outside of their neighborhood, and a majority of these parents give a lower grade to their local assigned public schools. Also, a higher percentage of open-enrollment parents state they are “very satisfied” with their school characteristics than their district conversion peers. This expressed dissatisfaction with local schools is a potential explanation for open-enrollment parents choosing a school other than their assigned school.

While the results of this survey are by no means conclusive in explaining why parents who are given the opportunity to choose a school outside of their assigned school are satisfied, it does show that parents who can choose a school are more satisfied. Future research into parent satisfaction in schools of choice like open-enrollment charter schools in Arkansas should compare levels of satisfaction for charter school parents to that of similar traditional public school parents.

Charter schools are held accountable to their customers, giving schools of choice an incentive to make sure these customers are satisfied with their choice. This survey seeks to analyze this customer satisfaction through an imperfect comparison, and shows that parents who are given the chance to choose a school appear to be more satisfied than charter school parents who were not given the chance to choose.

ARKANSAS CHARTER SCHOOL PROGRAM EVALUATION

Appendix A: Response Rate

Table A1: Response Rate by School, Open-enrollment

School Name	Enrollment	Responses	Within School Response Rate	GPA for Current School	GPA for Local Schools	GPA for AR Schools
Academics Plus (Maumelle Charter)	853	231	27.1%	3.65	2.05	2.02
Arkansas Arts Academy	774	49	6.3%	3.51	2.64	2.36
Arkansas Virtual Academy (ARVA)	1812	217	12.0%	3.73	1.77	2.23
Capitol City Lighthouse Charter School	297	47	15.8%	3.28	2.13	2.14
Covenant Keepers College Preparatory Charter School	171	44	25.7%	3.25	2.18	2.23
eSTEM Public Charter School	1462	204	14.0%	3.45	1.74	1.93
Exalt Academy of Southwest Little Rock	233	10	4.3%	3.10	2.50	2.60
Haas Hall Academy (Bentonville)	295	103	34.9%	3.73	2.71	2.32
Haas Hall Academy (Fayetteville)	352	110	31.3%	3.95	2.67	2.05
Imboden Area Charter School	44	0	0.0%	-		-
Jacksonville Lighthouse (Flightline)	190	115	60.5%	3.70	1.84	2.07
Jacksonville Lighthouse (Main Campus)	814	14	1.7%	3.70	1.84	2.07
KIPP Delta Public Schools (Blytheville)	380	54	14.2%	3.07	1.96	2.38
KIPP Delta Public Schools (Forrest City)	393	34	8.7%	3.07	1.96	2.38
KIPP Delta Public Schools (Helena/West Helena)	565	219	38.8%	2.19	2.50	2.44
LISA Academy (North Little Rock)	700	225	32.1%	3.08	1.84	1.96
LISA Academy (West Little Rock)	825	118	14.3%	3.43	1.89	2.10
Little Rock Preparatory Academy	118	104	88.1%	3.44	2.03	2.05
Northwest Arkansas Classical Academy	551	219	39.7%	3.56	2.70	2.25
Ozark Montessori Academy-Springdale	136	8	5.9%	3.38	2.50	2.00
Pine Bluff Lighthouse Charter School	343	23	6.7%	3.48	2.00	2.26
Premier High School of Little Rock	116	7	6.0%	3.43	1.86	1.71
Quest Middle School of Pine Bluff	89	0	0.0%	-	-	-
Quest Middle School of West Little Rock	231	54	23.4%	3.09	1.55	1.85
Rockbridge Montessori School	111	51	45.9%	3.18	1.80	2.17
SIATech Little Rock	166	5	3.0%	3.00	1.80	1.80
<b>Total</b>	12,021	2,265		3.37	2.14	2.15

ARKANSAS CHARTER SCHOOL PROGRAM EVALUATION

**Table A2:** Response Rate by School, District Conversion

School Name	Enrollment	Responses	Within School Response Rate	GPA for Current School	GPA for Local Schools	GPA for AR Schools
Academies of West Memphis	1137	1	0.1%	4.00	2.00	3.00
Badger Academy	26	0	0.0%	-	-	-
Bauxite Miner Academy	49	1	2.0%	-	-	-
Blytheville High School - A New Tech School	668	67	10.0%	2.88	2.78	2.69
Brunson New Vision Charter	259	7	2.7%	3.17	3.00	2.67
Cabot Academic Center of Excellence	229	1	0.4%	-	-	-
Cross County Elementary Technology Academy	342	4	1.2%	3.75	3.25	2.50
Cross County High School, A New Tech School	283	4	1.4%	3.00	2.75	2.75
Eastside New Vision Charter School	533	8	1.5%	1.40	2.20	2.20
Farmington Career Academies	533	36	6.8%	3.38	3.44	2.84
Fountain Lake Charter High School	445	15	3.4%	3.21	2.36	2.29
Fountain Lake Middle School Cobra Digital Prep Academy	430	38	8.8%	3.17	2.76	2.24
Lincoln High School	503	21	4.2%	3.15	2.95	2.55
Mountain Home High School Career Academy	1197	84	7.0%	3.04	3.06	2.63
Osceola STEM Academy	375	5	1.3%	1.20	1.20	1.8
Pea Ridge Manufacturing and Business Academy	126	0	0.0%	-	-	-
Rogers New Technology High School	541	20	3.7%	3.65	2.75	2.56
Siloam Springs High School	1318	2	0.2%	-	-	-
Southside Charter High School	378	6	1.6%	3.33	2.50	2.33
The Academies at Jonesboro High School	1140	1	0.1%	-	-	-
Warren High School	473	21	4.4%	1.94	1.81	2.31
Warren Middle School	361	18	5.0%	1.92	1.85	2.15
Washington Academy (Texarkana)	121	0	0.0%	-	-	-
<b>Total</b>	11,467	360		2.95	2.69	2.48

**Appendix B: Parent Satisfaction**

**Table B1: Parent Satisfaction with School Characteristics and Corresponding Grade for Current School**

	A		B		C		D		F	
	OE	DC								
Quality of teachers	3.77	3.76	3.24	3.15	2.83	2.85	3.19	2.33	1.55	1.67
Principal quality	3.64	3.57	3.10	3.16	2.68	2.63	3.20	2.06	1.55	2.00
Discipline in the school	3.66	3.48	3.01	2.96	2.56	2.44	3.03	1.93	1.40	2.00
What is taught in school	3.77	3.54	3.26	2.97	2.97	2.53	3.27	2.00	1.91	1.33
Amount your child has learned	3.79	3.66	3.28	2.98	2.99	2.52	3.30	2.06	1.82	1.44
Extracurricular activities offered	3.27	3.53	2.63	3.13	2.54	2.69	3.22	2.63	2.00	1.56
Student engagement with school	3.63	3.50	3.07	3.16	2.71	2.73	3.22	2.25	2.36	1.56
School safety	3.66	3.66	3.22	3.20	3.05	2.83	3.43	2.31	3.20	1.67
School facilities	3.05	3.46	2.45	3.13	2.56	2.67	3.12	2.44	2.20	1.89
Transportation	3.00	3.53	2.60	3.14	2.68	3.06	3.02	2.80	1.40	2.22
Other parents support for the school	3.50	3.41	2.98	2.96	2.77	2.55	3.08	2.31	1.91	1.78
School communication about academics	3.64	3.57	3.04	3.02	2.75	2.47	3.29	1.56	1.55	1.00
School communication about discipline	3.60	3.56	3.01	2.99	2.65	2.52	3.12	1.94	1.50	1.56
Opportunities for parental involvement	3.70	3.57	3.19	3.05	2.86	2.56	3.30	2.38	2.27	1.78
School's desire for parental involvement	3.70	3.58	3.24	3.01	2.87	2.54	3.29	2.38	2.36	1.78

*Note: Parents rated their satisfaction levels with the 15 given characteristics on a 4-point scale: 1=very dissatisfied, 2=dissatisfied, 3=satisfied, 4=very satisfied. Higher values are representative of more parents stating they are either satisfied or very satisfied.*

## Appendix C: Survey Instrument

**Office for  
Education  
Policy**

Dear Parent/Guardian,

Greetings from the Office for Education Policy at the University of Arkansas-Fayetteville, as we are working with the Arkansas Department of Education to evaluate public charter schools across the state. Part of our evaluation is to survey parents about their level of satisfaction with the public charter school that their child currently attends. Because of the special nature of public charter schools, it is necessary for an ongoing assessment of these schools to take place, both for the sake of accountability and as a requirement of law.

Following this letter, you will find a voluntary survey regarding your satisfaction with your student's charter school. Please fill out the survey and return it to the main office of your student's charter school. Please do not write your name anywhere on the document so that your responses will remain anonymous.

If you have any additional questions about this survey, please contact our office through email ([oepe@uark.edu](mailto:oepe@uark.edu)) or call us at: (479) 575-3773. You can also contact the Arkansas Department of Education Charter/Home School Office through email ([ade.charterschools@arkansas.gov](mailto:ade.charterschools@arkansas.gov)) or call their office at: (501) 683-5313.

Thank you for your cooperation with this survey!

- The Office for Education Policy  
Dr. Gary Ritter, Dr. Patrick J. Wolf, and Evan Rhinesmith

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**Charter School Parental/Guardian Satisfaction Survey**

**Directions:** This voluntary survey is a portion of the ADE’s Charter School Evaluation, which is being conducted by the Office for Education Policy at the University of Arkansas. Any questions should be sent to: [oepe@uark.edu](mailto:oepe@uark.edu). Please answer the following questions concerning the 2015-16 school year. When answering, please think of one of your children who is currently enrolled in a public charter school.

1.	What is the name of the charter school your child is <b>currently</b> attending?	_____
2.	What grade is your child in now (K through 12)?	_____
3.	How many years has your child been at this school, including 2015-16?	_____
4.	What is your relationship to the child associated with this survey (example: Mother or Stepfather or Guardian)?	_____
5.	Has your child enrolled in any previous school(s) in the last 3 years? If yes, please write the name of the school or schools.	_____

6. How many of your children have you ever enrolled in this charter school? \_\_\_\_\_

7. How did you initially hear about your child’s current school? (**Choose ALL that apply**)

a.	Newspaper/Magazine	<input type="checkbox"/>	g.	Internet	<input type="checkbox"/>
b.	Television/Radio	<input type="checkbox"/>	h.	Home visit	<input type="checkbox"/>
c.	Community center	<input type="checkbox"/>	i.	Community events	<input type="checkbox"/>
d.	Friends or relatives	<input type="checkbox"/>	j.	Flyers/Brochures	<input type="checkbox"/>
e.	Other charter schools	<input type="checkbox"/>	k.	Call from school	<input type="checkbox"/>
f.	Church	<input type="checkbox"/>	l.	Other (Specify) _____	<input type="checkbox"/>

8. On average, how long does it take to get from your home to your child’s charter school each morning?

- Under 10 minutes .....
- 11-20 minutes .....
- 21-30 minutes .....
- 31-45 minutes .....
- 46 minutes to 1 hour .....
- More than 1 hour .....

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9. On average, how long does it take to get from your home to the public school your child would attend if he/she did not attend the charter school?

- Under 10 minutes .....
- 11-20 minutes .....
- 21-30 minutes .....
- 31-45 minutes .....
- 46 minutes to 1 hour .....
- More than 1 hour .....

10. When you chose your child's current charter school, why did you do so? (**Choose ALL that apply**)

a.	This is my child's first school	<input type="checkbox"/>	j.	More challenging curriculum	<input type="checkbox"/>
b.	This school is less expensive	<input type="checkbox"/>	k.	School did not meet child's needs	<input type="checkbox"/>
c.	Smaller school	<input type="checkbox"/>	l.	Child was asked not to return	<input type="checkbox"/>
d.	School was in a convenient location	<input type="checkbox"/>	m.	Suspension or expulsion	<input type="checkbox"/>
e.	Child was not comfortable at school	<input type="checkbox"/>	n.	Moved away	<input type="checkbox"/>
f.	Wanted all children to be in the same school	<input type="checkbox"/>	o.	School closed	<input type="checkbox"/>
g.	Higher teacher quality	<input type="checkbox"/>	p.	Next grade level not offered	<input type="checkbox"/>
h.	Safer school environment	<input type="checkbox"/>	q.	Other (Specify) _____	<input type="checkbox"/>
i.	Better curriculum at this school	<input type="checkbox"/>			

11. Of the school characteristics you just selected, which do you consider the most important? Please **circle** the item in the list above.

12.	Was this school your first choice for your child?	YES <input type="checkbox"/>	NO <input type="checkbox"/>
a.	If no, please write the name of your first choice school.	_____	
b.	If no, please explain in the box below why your child is not at your first choice school.		

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13.	Do you plan to enroll your child in the same school next year?	YES <input type="checkbox"/>	NO <input type="checkbox"/>
14.	Have you ever moved so your child could attend a better school?	YES <input type="checkbox"/>	NO <input type="checkbox"/>
15.	Have you considered enrolling your child in a private school?	YES <input type="checkbox"/>	NO <input type="checkbox"/>

16. How many schools did you **contact** before choosing a school for your child? Please be specific as to how many of each type of school you contacted: traditional public, private, and public charter.

- a. Number of Traditional Public Schools: \_\_\_\_\_
- b. Number of Private Schools: \_\_\_\_\_
- c. Number of Public Charter Schools: \_\_\_\_\_

17. How many schools did you **visit** before choosing a school for your child? Please be specific as to how many of each type of school you visited: traditional public, private, and public charter.

- a. Number of Traditional Public Schools: \_\_\_\_\_
- b. Number of Private Schools: \_\_\_\_\_
- c. Number of Public Charter Schools: \_\_\_\_\_

18.	What overall grade would you give your child's current school? <b>(CIRCLE ONE LETTER.)</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>F</b>
19.	What grade would you give your local schools in general? <b>(CIRCLE ONE LETTER.)</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>F</b>
20.	What grade would you give Arkansas schools in general? <b>(CIRCLE ONE LETTER.)</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>F</b>
21.	What overall grade would you give your child's current teacher(s)? <b>(CIRCLE ONE LETTER.)</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>F</b>

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22.	What overall grade would you give the principal at your child's current school? <b>(CIRCLE ONE LETTER.)</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>F</b>
23.	What overall grade would you give the facilities at your child's current school? (Facilities meaning building, classrooms, etc.) <b>(CIRCLE ONE LETTER.)</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>F</b>

24. Thinking about your child's **CURRENT** school, how satisfied are you with each of the following? Please circle your response.

	Choose one per item	Very Dissatisfied	Dissatisfied	Satisfied	Very Satisfied
a.	Quality of teachers	1	2	3	4
b.	Principal quality	1	2	3	4
c.	Discipline in the school	1	2	3	4
d.	What is taught in school	1	2	3	4
e.	Amount your child has learned	1	2	3	4
f.	Extracurricular activities offered	1	2	3	4
g.	Student engagement with school	1	2	3	4
h.	School safety	1	2	3	4
i.	School facilities (library, gym, textbooks)	1	2	3	4
j.	Transportation	1	2	3	4
k.	Other parents support for the school	1	2	3	4
l.	School communication about academics	1	2	3	4
m.	School communication about discipline	1	2	3	4
n.	Opportunities for parental involvement	1	2	3	4
o.	School's desire for parental involvement	1	2	3	4

25. Please write the name of the school your child attended just before the current school:

\_\_\_\_\_

Now, thinking about your child's **CURRENT** school compared to your child's **PREVIOUS** school, how satisfied are you with each of the following? (Skip if your student has not attended another school.)

	Choose one per item	Worse than Previous School	Same as Previous School	Better than Previous School
a.	Quality of teachers	1	2	3
b.	Principal quality	1	2	3
c.	Discipline in the school	1	2	3
d.	What is taught in school	1	2	3
e.	Amount your child has learned	1	2	3
f.	Extracurricular activities offered	1	2	3

ARKANSAS CHARTER SCHOOL PROGRAM EVALUATION

g.	Student engagement with school	1	2	3
h.	School safety	1	2	3
i.	School facilities (library, gym, textbooks)	1	2	3
j.	Transportation	1	2	3
k.	Other parents support for the school	1	2	3
l.	School communication about academics	1	2	3
m.	School communication about discipline	1	2	3
n.	Opportunities for parental involvement	1	2	3
o.	School's desire for parental involvement	1	2	3

26. How **serious** are the following problems at your child's current school?

	Choose one per item	Very Serious	Somewhat Serious	Not Serious	Don't Know
a.	Students destroying property	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	N/A <input type="checkbox"/>
b.	Fighting	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	N/A <input type="checkbox"/>
c.	Racial conflict	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	N/A <input type="checkbox"/>
d.	Drugs/Alcohol	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	N/A <input type="checkbox"/>
e.	Teacher absenteeism	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	N/A <input type="checkbox"/>
f.	Teacher turnover	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	N/A <input type="checkbox"/>
g.	Bullying	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	N/A <input type="checkbox"/>
h.	Students cheating	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	N/A <input type="checkbox"/>
i.	Gangs	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	N/A <input type="checkbox"/>

27. How often did you (or someone in your household) do any of the following at your child's school this past year?

	Choose one per item	0 times	1-3 times	4-6 times	7+ times
a.	Volunteer at your child's school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Attend parent/teacher conferences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Take part in activities of a parent/teacher organization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Meet with other organizations dealing with school matters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28. During this year, how many times did you (or someone in your household) have contact with the school about each of the following?

	<b>Choose one per item</b>	Never	Once or Twice	3 or 4 times	5 times or more
a.	Your child's academic performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Volunteering at the school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Participating in fundraisers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Providing information for school records	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Your child's behavior	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29. For each of the following statements, please select if you: Strongly Disagree, Disagree, Agree, or Strongly Agree.

	<b>Choose one per item</b>	Strongly Disagree	Disagree	Agree	Strongly Agree
a.	I trust the teachers at my school.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
b.	My child's school has high expectations for academic achievement.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
c.	I feel capable to participate in organizations at my child's school.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
d.	I know more about my child's school than most parents.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
e.	I don't have a say about what happens in schools.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
f.	School staff don't care what I think.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

30. Thinking specifically about your child's **CURRENT** school:

a.	In a typical week, about how many nights does your child have homework?	0 nights <input type="checkbox"/>	1-2 nights <input type="checkbox"/>	3-4 nights <input type="checkbox"/>	5-7 nights <input type="checkbox"/>
----	---	--------------------------------------	--	--	--

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b.	About how much time per night does it typically take to complete the homework?	15 minutes or less	15-30 minutes	30 minutes to 1 hour <input type="checkbox"/>	More than 1 hour <input type="checkbox"/>
c.	About how many nights in a typical week do you help with your child's homework?	0 nights <input type="checkbox"/>	1-2 nights	3-4 nights	5-7 nights

31.	Do you think this amount of homework is:	Far too little <input type="checkbox"/>	Too little <input type="checkbox"/>	About right <input type="checkbox"/>	Too much <input type="checkbox"/>	Far too much <input type="checkbox"/>
-----	--	--	--	---	--------------------------------------	--

32.	Do you think this homework is:	Much too easy <input type="checkbox"/>	Too easy <input type="checkbox"/>	About right <input type="checkbox"/>	Too hard <input type="checkbox"/>	Much too hard <input type="checkbox"/>
-----	--------------------------------	---	--------------------------------------	---	--------------------------------------	---

33. How many times in a normal week would you say you participate in the following activities with your child?

	Choose one per item	Never	Once or Twice	3 or 4 times	5 times or more
a.	Read with or to your child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Work on math or arithmetic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Work on writing or penmanship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Watch educational programs on TV with your child	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Use an online educational resource such as Khan Academy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

34. How often do you talk with other parents about matters going on at your child's school?

- Rarely or Never.....
- Once or twice a month.....
- Once or twice a week.....
- Almost every day.....

35. What is the name of the principal at your child's school?

\_\_\_\_\_

[FIRST NAME]

\_\_\_\_\_

[LAST NAME]

36. Who do you think is most responsible for the academic achievement of children in schools? Please select **only one**.

- Parents.....
- Schools staff/teachers.....

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The community .....   
 The government .....   
 Students .....   
 Other (please specify below).....

**Demographics**

37.	What is your race/ethnicity (Mark ALL that apply)	African- American <input type="checkbox"/>	American Indian <input type="checkbox"/>	Asian/Pacific Islander <input type="checkbox"/>	Hispanic <input type="checkbox"/>	White <input type="checkbox"/>
38.	What is the highest educational level that you have completed?	Below High School <input type="checkbox"/>	Some High School/GED <input type="checkbox"/>	High School Graduate <input type="checkbox"/>	Some College <input type="checkbox"/>	College Degree or more <input type="checkbox"/>
39.	Is your child eligible for the Free and Reduced Lunch Program?		Free <input type="checkbox"/>	Reduced <input type="checkbox"/>	Ineligible <input type="checkbox"/>	Unsure <input type="checkbox"/>
40.	How would you describe your current work situation?	Working <input type="checkbox"/>	Retired <input type="checkbox"/>	Student <input type="checkbox"/>	Unemployed <input type="checkbox"/>	Homemaker <input type="checkbox"/>
41.	Does your child have any learning disabilities?	Yes <input type="checkbox"/>	No <input type="checkbox"/>			

**Comments: If you have any additional comments about your current charter school, please include those in the box below.**

### **SECTION 3: CONCLUSIONS AND RECOMMENDATIONS**

### Summary of Findings

Our general charge was to evaluate the effectiveness of Arkansas charter schools over the past three years. Because we were unable to conduct a “gold-standard” random assignment study, we employed multiple analytic strategies as robustness checks for our primary matched-twin study. Thus, the primary focus of our study was to ask the two following questions:

1. Are charters effective in this state?
2. Should we believe these results? Does our strategy of using waitlist students as the comparison population yield similar results as a “matching study” comparing charter students to similar students in TPS schools?

The average annual effect of all charter schools (including open-enrollment and conversion schools) across the state was positive and statistically significant in Math Benchmark test scores, while there was no significant effect on Literacy Benchmark test scores. The results were negative in high school Geometry and null in high school literacy. These results, and all subgroup results, are displayed in the table below.

**Conclusion Table 1:** Summary of Subgroup Effects in Standardized Units, 2011-14

School	Academic Impacts of Public Charter Schools (Average 1-Yr Impacts)				
	Overall	Benchmark Math	Benchmark Literacy	Geometry	11th Grade Literacy
<b>All Charter Schools</b>	<b>0.008 *</b>	<b>0.021 ***</b>	<b>0.005</b>	<b>-0.094 ***</b>	<b>0.000</b>
Open Enrollment	0.023 ***	0.025 ***	0.024 ***	-0.078 ***	0.120 ***
District Conversion	-0.021 ***	0.017	-0.027 **	-0.117 ***	-0.088 ***
<b>Open-Enrollment Charter Schools by Subgroup</b>					
Less Mature (Less than 5 years as of 2011-12)	0.046 ***	0.058 ***	0.045 ***	-0.096 ***	0.058
More Mature (5 years or more as of 2011-12)	0.001	-0.015	0.003	-0.006	0.158 ***
Waitlist	0.034 ***	0.038 ***	0.032 ***	-0.044	0.115 ***
No Waitlist Reported	-0.004	-0.006	0.009	-0.154 ***	0.138 **
Little Rock Metro	0.038 ***	0.047 ***	0.043 ***	-0.098 ***	0.052
Non- Little Rock Metro	0.000	0.000	-0.014	-0.042	0.215 ***
Schools Serving ≥ 61% FRL Students (State Average)	0.054 ***	0.036 ***	0.070 ***	0.032	0.228 ***
Schools Serving < 61% FRL Students (State Average)	0.007	0.018 *	0.002	-0.109 ***	0.106 ***

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

If we consider only open-enrollment charter schools, the story is slightly more positive. There are significant positive effects, although they are small annual effects, for math and literacy in grades 3-8. The magnitude of these effects are approximately 0.025 standard deviate units per year. The high school results are larger, but based on smaller sample sizes because they are based on only one exam for math

(EOC Geometry) and one exam for literacy (Grade 11 Literacy). Here, we find larger negative results in Geometry (-.08) and larger positive results in literacy (+.12).

In general, the positive effects of open-enrollment charter schools in both elementary and middle school subject areas (Math and Literacy) are driven by the newer schools, schools with waitlists, schools in the Little Rock Metro area, and schools serving more economically disadvantaged students ( $\geq$  State Average of about 61% FRL). Therefore, it appears that these types of schools are more likely to positively effect the achievement of elementary students and middle school students, regardless of subject.

In contrast, the negative effects of open-enrollment charter schools in Geometry and the null effects of 11<sup>th</sup> Grade Literacy tell less of a consistent story. There are overall negative effects for both EOC tests in district conversion schools, but open-enrollment schools, had negative effects on Geometry and positive effects on 11<sup>th</sup> Grade Literacy.

Reasonable conclusions that can be drawn from this study are that the public charter schools in Arkansas have their clearest positive effect on student test scores in the grades prior to high school and in Math in particular. Arkansas charters have their clearest negative effect on student test scores in the high school grades and specifically in Geometry. The school year 2012-13 appeared to be the strongest individual year for charter school performance, compared with 2011-12 and 2013-14. Particular open-enrollment schools primarily drive the strong positive results in 2012-13 with positive effects on the Math and Literacy Benchmarks as well as the 11<sup>th</sup> Grade Literacy Exam. Two of these schools were not included in the 2011-12 analysis due to a very small sample size, so this could explain some of the jump in positive effects in 2012-13.

The results of this evaluation tell a somewhat different story than the previous evaluations of Arkansas public charter schools discussed in the Literature Review. The “matched twin” methodology is similar to the one used in the CREDO studies of Arkansas charters (2009; 2013) and falls within the same general class of rigorous quasi-experimental methods as the Mills (2014) study. In the end, the current study may have somewhat different results because this evaluation covers a different time period than previous studies covered.

With the evaluation that has been performed, there were certain limitations that can be improved upon in future studies. First, the "gold standard" experimental design strategy could not be used because of differences in the types and amount of data collected from charter schools about their admissions lotteries. A quasi-experimental study design was implemented instead. A second limitation of this study was the relatively low student match rates, especially in certain subjects such as the Geometry EOC. Several of the charter schools, by design or for other reasons, maintain low student populations and therefore have low numbers of students tested.

### Should We Believe the Results?

To assess the extent to which we should believe these results, we consider results for the limited sample of students attending charter schools in the same region as charters with waitlists. Thus, we restrict the sample to the same schools included in the waitlist-matching and applicant analyses for comparison. Recall that this analytic strategy required that we match each charter student with similar

traditional public school students who applied for charter schools but were not admitted (waitlisted) in the 2012-13 school year. Thus, the comparison students would be, by virtue of our matching nearly identical on observable characteristics. Moreover, because the comparison students were themselves applicants to charter schools, our analysis is not limited by important unobservable or motivational differences between the treatment and comparison students.

If the results of this analysis (for the restricted sample of schools and students in regions with student waitlists) provide similar estimates to those of general TPS-matching analysis, we can have greater confidence that our matching strategy is not significantly threatened by self-selection.

Indeed, in the waitlist-restricted TPS-matching analysis, we see similar (but not identical) results to those from the general matching analysis (for those same schools) in the two years since the waitlist data were available (2012-13 and 2013-14). For **math**, in 2012-13, the estimate of the charter effect derived from the matching twin strategy is +.09 (statistically significant at the .01 level); the effect estimate from the waitlist strategy is +.05 (statistically significant at the .05 level). In 2013-14, the estimate of the charter effect derived from the matching twin strategy is +.03 (statistically significant at the .10 level); the effect estimate from the waitlist strategy is +.02 (not statistically significant). For **literacy**, in 2012-13, the estimate of the charter effect derived from the matching twin strategy is +.07 (statistically significant at the .01 level); the effect estimate from the waitlist strategy is +.04 (statistically significant at the .05 level). In 2013-14, the estimate of the charter effect derived from the matching twin strategy is +.03 (statistically significant at the .05 level); the effect estimate from the waitlist strategy is +.01 (not statistically significant).

The fact that these results are so similar gives us greater confidence in the results of the full TPS-matching analysis; thus, we should trust our results. Furthermore, results from these analyses are consistent with the general patterns of modest charter school effects from the national studies reviewed in the literature.

Of course, these modest positive results mask a great deal of internal variation. Some Arkansas charter schools post consistent positive results while others do not. Policymakers should certainly view year-to-year results with caution, but use this information along with a variety of other data to inform decisions on how to proceed with charter school reauthorization decisions.

Finally, based on our examination of the charter lotteries that were conducted and are conducted each year in several oversubscribed charter schools in the state, we conclude the report with several recommendations for the administration of and recordkeeping that accompanies student admission lotteries to public charter schools in the state. Our recommendations, focused on transparency, also lend themselves to a greater ability to study charter school effects in the future using admission lotteries.

### Policy Recommendations: Lotteries in Oversubscribed Charters

Due to the limitations of data collection, firm conclusions about all oversubscribed open-enrollment charter schools were not possible. Given that the state law does not require or provide specific documentation guidelines for lottery results, the data received were not collected in a comprehensive and

systematic way by a majority of oversubscribed charter schools in both 2012 and 2013. For example, it was not clear how the lottery conducted for each school generated the list of admitted and waitlisted students. Also there was no way to be sure that the waitlist information was complete, as only waitlisted students with previous public school enrollment were able to be included (any or all out of state, private school, or home school applicants may not have been reported). Additionally, there was no information on whether students admitted were awarded automatic admission outside of the lottery and the reasons for that automatic admission (such as a sibling preference or mid-year transfer).

This problem could be remedied, and a “gold standard” rigorous experimental analysis could be conducted, if oversubscribed charter schools did the following:

1. Establish exact and complete groups of students “admitted by lottery” and “not admitted by lottery”, and provided such lists to the ADE after lottery takes place.
2. Generate randomly-ordered waiting lists for each relevant grade and admit students in order off of that list; provide the ADE with the original waitlist and indicate the last student who was offered admission off of the list along with the outcome of the offer (accepted or declined);
3. Clearly indicate any students who were awarded automatic admission outside of the lottery and the reasons for that automatic admission (such as a sibling preference or mid-year transfer).

We are not claiming that the charter lotteries in Arkansas have been administered improperly. The incomplete records documenting the results of those lotteries simply lack the detail necessary for researchers to draw upon them to conduct a fully experimental, random assignment analysis of charter school effects. The approaches described above would allow for more clear and complete identification of which students were offered admission and which students were not offered admission through the lottery, which is the foundation of a rigorous experimental analysis.<sup>62</sup>

### Policy Recommendations: On-going Performance Review

One of the most beneficial aspects of charter schools is that they are held accountable for their outcomes. Our final recommendation involves bringing a systematic version of this type of study into the charter renewal process. While academic effects do not encompass the entire mission of a charter school, or any school, these results can provide meaningful information to charter authorizers and the public. Thus, prior to the consideration of charter school renewal requests by the state’s Charter Authorizing Panel, researchers should be commissioned to conduct matching twin studies of the charter schools in question for the previous several years and share this information with the Panel. In this way, the Panel would know exactly how the analyses were conducted and would not have to consider only the data presented by the charter school leaders themselves.

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<sup>62</sup> Nevertheless, even if it were possible to do this in the future, it should be noted that it would likely still only be possible to study a small subsample of charter students, because most multi-grade charter schools do not have open seats in each grade, because most students simply continue on from one grade to the next in their charter “slot”.

**ARKANSAS CHARTER SCHOOL  
ACADEMIC EVALUATION:  
3-YEAR STATE-WIDE MATCHING STUDY  
(2011-12 TO 2013-14)  
SCHOOL LEVEL APPENDIX**

**Office for Education Policy  
University of Arkansas  
211 Graduate Education Building  
Fayetteville, AR 72701  
Phone: (479) 575-3773  
Fax: (479) 575-3196  
E-mail: oep@uark.edu**

Academics Plus.....	3
The Academies at Jonesboro .....	10
Academy of Service and Technology (Vilonia) .....	13
Academy of Technology (Vilonia).....	17
Arkansas Virtual Academy.....	21
Arkansas Arts Academy (Formerly Benton County School of the Arts).....	25
Brunson New Vision Charter School.....	32
Cabot ACE.....	35
Cloverdale Aerospace Technology .....	42
Covenant Keepers.....	46
Cross County Elementary Tech .....	52
Cross County New Tech High .....	56
Dreamland Academy .....	63
eStem Charter School .....	66
Haas Hall.....	73
Imboden Area Charter .....	80
Jacksonville Lighthouse.....	84
KIPP Blytheville.....	90
KIPP Delta .....	94
Lincoln Middle Academy of Excellence .....	101
Lincoln High School New Tech .....	105
Lisa Academy .....	112
Lisa Academy North.....	119
Little Rock Prep.....	126

Mountain Home High School Career Academy ..... 130  
Northwest Arkansas Classical Academy ..... 134  
Oak Grove Elementary Health, Wellness, and Environmental Science ..... 137  
Osceola Stem Academy ..... 141  
Pine Bluff Lighthouse..... 145  
Quest Middle School of Pine Bluff..... 149  
Ridgeroad Charter..... 152  
Rogers New Tech High..... 155  
Washington Academy ..... 157



## Elementary Effects

<i>Academic Impacts of Academics Plus Charter School on Math Benchmarks, 2011-14</i>					
	2011-12	2012-13	2013-14		
<b>Grades Served</b>	K-12	K-12	K-12		
<b>Total Enrollment</b>	623	648	650		
<b>Grades Included</b>	4-8	4-8	4-8		
<b>Enrollment in Included Grades</b>	233	250	247		
<b>Sample Size (Treatment)</b>	190	209	211		
<b>Sample Size (% of Inc. Grade Enrollment)</b>	82%	84%	85%		
				<b>Avg. Effect</b>	
<b>OLS Treatment Effect</b>	<b>-0.153</b>	<b>***</b>	<b>+0.047</b>	<b>-0.019</b>	<b>-0.037</b>
<b>Robust Standard Error</b>	(0.057)		(0.053)	(0.059)	(0.083)

<i>Academic Impacts of Academics Plus Charter School on Literacy Benchmarks, 2011-14</i>					
	2011-12	2012-13	2013-14		
<b>Grades Served</b>	K-12	K-12	K-12		
<b>Total Enrollment</b>	623	648	650		
<b>Grades Included</b>	4-8	4-8	4-8		
<b>Enrollment in Included Grades</b>	233	250	247		
<b>Sample Size (Treatment)</b>	191	208	208		
<b>Sample Size (% of Inc. Grade Enrollment)</b>	82%	83%	84%		
				<b>Avg. Effect</b>	
<b>OLS Treatment Effect</b>	<b>+0.105</b>	<b>*</b>	<b>+0.041</b>	<b>+0.041</b>	<b>0.060 **</b>
<b>Robust Standard Error</b>	(0.054)		(0.052)	(0.048)	(0.0295)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

Secondary Effects

**Academic Impacts of Academics Plus Charter School on Geometry EOC, 2011-14**

	2011-12	2012-13	2013-14		
<b>Grades Served</b>	K-12	K-12	K-12		
<b>Total Enrollment</b>	623	648	650		
<b>Grades Included</b>	8-10	9-10	8-10		
<b>Enrollment in Included Grades</b>	143	94	122		
<b>Sample Size (Treatment)</b>	44	36	26		
<b>Sample Size (% of Inc. Grade Enrollment)</b>	31%	38%	21%		
					<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.304</b>	<b>**</b>	<b>-0.023</b>	<b>+0.448</b>	<b>***</b>
<b>Robust Standard Error</b>	(0.144)		(0.128)	(0.164)	
					<b>+0.004</b>
					<b>(0.083)</b>

**Academic Impacts of Academics Plus Charter School on 11th Grade Literacy EOC, 2011-14**

	2011-12	2012-13	2013-14		
<b>Grades Served</b>	K-12	K-12	K-12		
<b>Total Enrollment</b>	623	648	650		
<b>Grades Included</b>	11	11	11		
<b>Enrollment in 11th Grade</b>	42	42	37		
<b>Sample Size (Treatment)</b>	26	31	29		
<b>Sample Size (% of 11th Grade Enrollment)</b>	62%	74%	78%		
					<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.039</b>	<b>+0.108</b>	<b>-0.269</b>	<b>**</b>	
<b>Robust Standard Error</b>	(0.147)	(0.165)	(0.110)		
					<b>-0.099</b>
					<b>(0.078)</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math Benchmark**

<i>Baseline Equivalency for Academics Plus in Math, 2011-12</i>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	190	190	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.08	6.08	-	1.000
<b>Prior Year Math Z-Score</b>	-0.01	-0.01	(0.00)	0.999
<b>Prior Year Literacy Z-Score</b>	0.04	0.10	(0.06)	0.531
<b>% FRL</b>	0.32	0.32	0.01	0.912
<b>% Minority</b>	0.31	0.34	(0.03)	0.510
<b>% Female</b>	0.52	0.57	(0.05)	0.303

<i>Baseline Equivalency for Academics Plus in Math, 2012-13</i>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	209	209	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	5.81	5.81	-	1.000
<b>Prior Year Math Z-Score</b>	0.06	0.06	-	1.000
<b>Prior Year Literacy Z-Score</b>	0.27	0.19	0.08	0.309
<b>% FRL</b>	0.34	0.34	0.00	0.918
<b>% Minority</b>	0.25	0.24	0.00	0.910
<b>% Female</b>	0.45	0.45	-	1.000

<i>Baseline Equivalency for Academics Plus in Math, 2013-14</i>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	211	211	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	5.91	5.91	-	1.000
<b>Prior Year Math Z-Score</b>	0.20	0.20	-	1.000
<b>Prior Year Literacy Z-Score</b>	0.20	0.29	(0.09)	0.241
<b>% FRL</b>	0.29	0.28	0.00	0.914
<b>% Minority</b>	0.20	0.21	(0.00)	0.904
<b>% Female</b>	0.45	0.46	(0.01)	0.769

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmark**

<b><i>Baseline Equivalency for Academics Plus in Literacy, 2011-12</i></b>					
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>	
<b>Number of Observations</b>	191	191	-		
<b>Range of Grades Served</b>	K-12	K-12	-		
<b>Range of Grades in Analysis</b>	4-8	4-8	-		
<b>Average Grade</b>	6.07	6.07	-	1.000	
<b>Prior Year Math Z-Score</b>	-0.03	0.10	(0.13)	0.206	
<b>Prior Year Literacy Z-Score</b>	0.02	0.02	(0.00)	0.970	
<b>% FRL</b>	0.33	0.47	(0.14)	***	0.007
<b>% Minority</b>	0.31	0.43	(0.12)	**	0.020
<b>% Female</b>	0.52	0.47	0.05	0.357	

<b><i>Baseline Equivalency for Academics Plus in Literacy, 2012-13</i></b>					
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>	
<b>Number of Observations</b>	208	208	-		
<b>Range of Grades Served</b>	K-12	K-12	-		
<b>Range of Grades in Analysis</b>	4-8	4-8	-		
<b>Average Grade</b>	5.82	5.82	-	1.000	
<b>Prior Year Math Z-Score</b>	0.07	0.11	(0.04)	0.629	
<b>Prior Year Literacy Z-Score</b>	0.30	0.30	(0.00)	0.974	
<b>% FRL</b>	0.35	0.42	(0.07)	0.130	
<b>% Minority</b>	0.25	0.35	(0.10)	**	0.032
<b>% Female</b>	0.45	0.50	(0.04)	0.377	

<b><i>Baseline Equivalency for Academics Plus in Literacy, 2013-14</i></b>					
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>	
<b>Number of Observations</b>	208	208	-		
<b>Range of Grades Served</b>	K-12	K-12	-		
<b>Range of Grades in Analysis</b>	4-8	4-8	-		
<b>Average Grade</b>	5.92	5.92	-	1.000	
<b>Prior Year Math Z-Score</b>	0.23	0.22	0.01	0.887	
<b>Prior Year Literacy Z-Score</b>	0.27	0.27	(0.00)	0.985	
<b>% FRL</b>	0.29	0.31	(0.02)	0.593	
<b>% Minority</b>	0.21	0.26	(0.05)	0.202	
<b>% Female</b>	0.46	0.50	(0.04)	0.432	

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Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Geometry EOC**

<b><i>Baseline Equivalency for Academics Plus in Geometry, 2011-12</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	44	44	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	8-10	8-10	-	
<b>Average Grade</b>	9.59	9.59	-	1.000
<b>Baseline Algebra Score</b>	-0.09	-0.09	-	1.000
<b>% FRL</b>	0.23	0.25	(0.02)	0.803
<b>% Minority</b>	0.18	0.20	(0.02)	0.787
<b>% Female</b>	0.55	0.59	(0.05)	0.667

<b><i>Baseline Equivalency for Academics Plus in Geometry, 2012-13</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	36	36	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	9-10	9-10	-	
<b>Average Grade</b>	9.58	9.58	-	1.000
<b>Baseline Algebra Score</b>	-0.03	-0.03	-	1.000
<b>% FRL</b>	0.33	0.25	0.08	0.437
<b>% Minority</b>	0.42	0.47	(0.06)	0.635
<b>% Female</b>	0.56	0.58	(0.03)	0.812

<b><i>Baseline Equivalency for Academics Plus in Geometry, 2013-14</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	26	26	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	8-10	8-10	-	
<b>Average Grade</b>	9.65	9.65	-	1.000
<b>Baseline Algebra Score</b>	-0.29	-0.29	(0.00)	0.994
<b>% FRL</b>	0.23	0.19	0.04	0.734
<b>% Minority</b>	0.19	0.27	(0.08)	0.510
<b>% Female</b>	0.58	0.65	(0.08)	0.569

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*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy EOCs**

<b>Baseline Equivalency for Academics Plus in 11th Grade Literacy, 2011-12</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	26	26	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.04	0.05	(0.00)	0.996
<b>% FRL</b>	0.27	0.31	(0.04)	0.760
<b>% Minority</b>	0.15	0.19	(0.04)	0.714
<b>% Female</b>	0.62	0.58	0.04	0.777

<b>Baseline Equivalency for Academics Plus in 11th Grade Literacy, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	31	31	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.02	0.03	(0.00)	0.981
<b>% FRL</b>	0.16	0.32	(0.16)	0.138
<b>% Minority</b>	0.23	0.32	(0.10)	0.393
<b>% Female</b>	0.48	0.61	(0.13)	0.307

<b>Baseline Equivalency for Academics Plus in 11th Grade Literacy, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	29	29	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.17	0.17	(0.00)	0.996
<b>% FRL</b>	0.24	0.24	-	1.000
<b>% Minority</b>	0.45	0.45	-	1.000
<b>% Female</b>	0.62	0.48	0.14	0.291

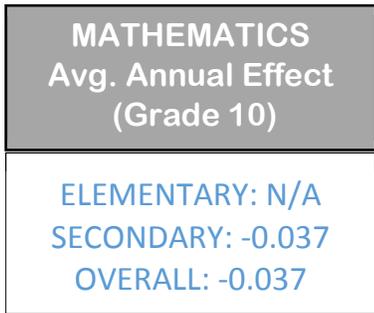
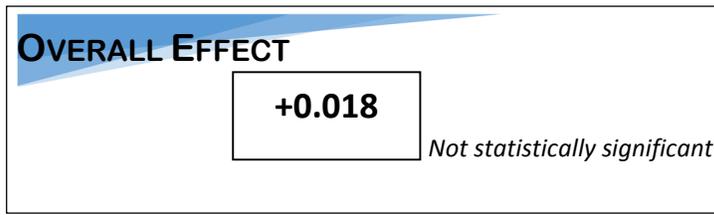
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*No asterisks means the effect is not statistically significant.*

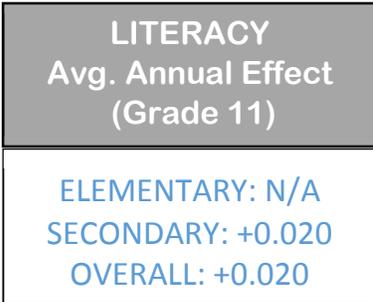
*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# The Academies at Jonesboro



Jonesboro, AR  
 District Conversion  
 Grades Served: 9-12  
 Year Opened: 2013



Secondary Effects (EOC Exams)				
Year	#Charter Students	EOC Effect-Math	#Charter Students	EOC Effect-Literacy
11-12	-	-	-	-
12-13	-	-	-	-
13-14	77	-0.037	196	+0.020
<b>Avg. Annual Effect</b>		<b>-0.037</b>		<b>+0.020</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level  
 No asterisks means the effect is not statistically significant.  
 Effect sizes expressed as a percentage of one standard deviation in the test score distribution.  
 Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Secondary Effects

### *Academic Impacts of The Academies at Jonesboro on Geometry EOC, 2013-14*

		<b>2013-14</b>
	<b>Grades Served</b>	9-12
	<b>Total Enrollment</b>	1,068
	<b>Grades Included</b>	10
	<b>Enrollment in Included Grades</b>	370
	<b>Sample Size (Treatment)</b>	77
	<b>Sample Size (% of Inc. Grade Enrollment)</b>	21%
		<b>Avg. Effect</b>
	<b>OLS Treatment Effect</b>	<b>-0.037</b>
	<b>Robust Standard Error</b>	<b>(0.095)</b>

### *Academic Impacts of The Academies at Jonesboro on 11th Grade Literacy EOC, 2011-14*

		<b>2013-14</b>
	<b>Grades Served</b>	9-12
	<b>Total Enrollment</b>	1,068
	<b>Grades Included</b>	11
	<b>Enrollment in 11th Grade</b>	378
	<b>Sample Size (Treatment)</b>	196
	<b>Sample Size (% of 11th Grade Enrollment)</b>	52%
		<b>Avg. Effect</b>
	<b>OLS Treatment Effect</b>	<b>+0.020</b>
	<b>Robust Standard Error</b>	<b>(0.056)</b>

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—EOCs**

***Baseline Equivalency for The Academies at Jonesboro in Geometry, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	77	77	-	
<b>Range of Grades Served</b>	9-12	9-12	-	
<b>Range of Grades in Analysis</b>	10	10	-	
<b>Average Grade</b>	10.00	10.00	-	1.000
<b>Baseline Algebra Score</b>	-0.11	-0.11	0.00	0.998
<b>% FRL</b>	0.74	0.74	-	1.000
<b>% Minority</b>	0.31	0.31	-	1.000
<b>% Female</b>	0.39	0.34	0.05	0.503

***Baseline Equivalency for The Academies at Jonesboro in 11th Grade Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	196	196	-	
<b>Range of Grades Served</b>	9-12	9-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.42	0.42	(0.00)	0.980
<b>% FRL</b>	0.49	0.47	0.03	0.613
<b>% Minority</b>	0.72	0.79	(0.07)	0.125
<b>% Female</b>	0.47	0.57	(0.10) *	0.055

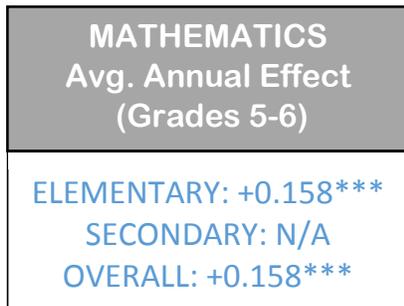
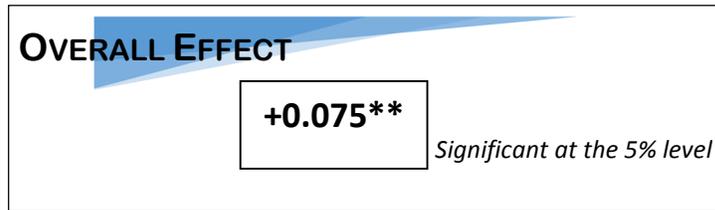
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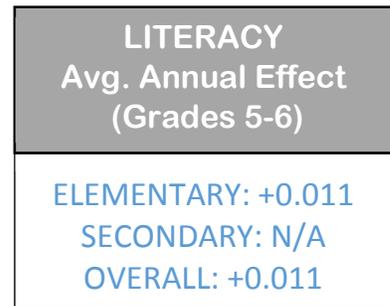
*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# ACADEMY OF SERVICE AND TECHNOLOGY (VILONIA)



Vilonia, AR  
 District Conversion  
 Grades Served: 5-6  
 Year Opened: 2007



Elementary Effects (Benchmark Exams)					
Year	#Charter Students	Benchmark Effect- Math		#Charter Students	Benchmark Effect- Literacy
11-12	81	+0.081		83	-0.045
12-13	84	+0.260	***	76	+0.034
13-14	71	+0.172	**	72	+0.040
<b>Avg. Annual Effect</b>		<b>+0.158</b>	<b>***</b>		<b>+0.011</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

### *Academic Impacts of Academy of Service and Tech on Math Benchmarks, 2011-14*

	2011-12	2012-13	2013-14			
<b>Grades Served</b>	5-6	5-6	5-6			
<b>Total Enrollment</b>	111	105	109			
<b>Grades Included</b>	5-6	5-6	5-6			
<b>Enrollment in Included Grades</b>	111	105	109			
<b>Sample Size (Treatment)</b>	81	84	71			
<b>Sample Size (% of Inc. Grade Enrollment)</b>	73%	80%	65%			
						<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.081</b>	<b>+0.260</b> ***	<b>+0.172</b> **			<b>+0.158</b> ***
<b>Robust Standard Errors</b>	(0.080)	(0.099)	(0.086)			<b>(0.050)</b>

### *Academic Impacts of Academy of Service and Tech on Literacy Benchmarks, 2011-14*

	2011-12	2012-13	2013-14		
<b>Grades Served</b>	5-6	5-6	5-6		
<b>Total Enrollment</b>	111	105	109		
<b>Grades Included</b>	5-6	5-6	5-6		
<b>Enrollment in Included Grades</b>	111	105	109		
<b>Sample Size (Treatment)</b>	83	76	72		
<b>Sample Size (% of Inc. Grade Enrollment)</b>	75%	72%	66%		
					<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.045</b>	<b>+0.034</b>	<b>+0.040</b>		<b>+0.011</b>
<b>Robust Standard Errors</b>	(0.078)	(0.080)	(0.072)		<b>(0.044)</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math Benchmarks**

<b><i>Baseline Equivalency for Academy of Service and Tech in Math, 2011-12</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	81	81	-	
<b>Range of Grades Served</b>	5-6	5-6	-	
<b>Range of Grades in Analysis</b>	5-6	5-6	-	
<b>Average Grade</b>	5.49	5.49	-	1.000
<b>Prior Year Math Z-Score</b>	0.36	0.36	-	1.000
<b>Prior Year Literacy Z-Score</b>	0.45	0.56	(0.11)	0.312
<b>% FRL</b>	0.40	0.36	0.04	0.627
<b>% Minority</b>	0.00	0.01	(0.01)	0.316
<b>% Female</b>	0.52	0.56	(0.04)	0.636

<b><i>Baseline Equivalency for Academy of Service and Tech in Math, 2012-13</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	84	84	-	
<b>Range of Grades Served</b>	5-6	5-6	-	
<b>Range of Grades in Analysis</b>	5-6	5-6	-	
<b>Average Grade</b>	5.52	5.52	-	1.000
<b>Prior Year Math Z-Score</b>	0.35	0.35	-	1.000
<b>Prior Year Literacy Z-Score</b>	0.43	0.39	0.03	0.754
<b>% FRL</b>	0.42	0.46	(0.05)	0.534
<b>% Minority</b>	0.04	0.01	0.02	0.311
<b>% Female</b>	0.60	0.58	0.01	0.875

<b><i>Baseline Equivalency for Academy of Service and Tech in Math, 2013-14</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	71	71	-	
<b>Range of Grades Served</b>	5-6	5-6	-	
<b>Range of Grades in Analysis</b>	5-6	5-6	-	
<b>Average Grade</b>	5.44	5.44	-	1.000
<b>Prior Year Math Z-Score</b>	0.26	0.26	-	1.000
<b>Prior Year Literacy Z-Score</b>	0.16	0.17	(0.01)	0.950
<b>% FRL</b>	0.37	0.32	0.04	0.596
<b>% Minority</b>	0.03	0.01	0.01	0.560
<b>% Female</b>	0.46	0.45	0.01	0.866

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

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*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

***Baseline Equivalency for Academy of Service and Tech in Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	83	83	-	-
<b>Range of Grades Served</b>	5-6	5-6	-	
<b>Range of Grades in Analysis</b>	5-6	5-6	-	
<b>Average Grade</b>	5.57	5.57	-	1.000
<b>Prior Year Math Z-Score</b>	0.42	0.33	0.09	0.451
<b>Prior Year Literacy Z-Score</b>	0.62	0.62	0.00	0.999
<b>% FRL</b>	0.40	0.36	0.04	0.631
<b>% Minority</b>	0.00	0.00	-	1.000
<b>% Female</b>	0.55	0.54	0.01	0.876

***Baseline Equivalency for Academy of Service and Tech in Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	76	76	-	
<b>Range of Grades Served</b>	5-6	5-6	-	
<b>Range of Grades in Analysis</b>	5-6	5-6	-	
<b>Average Grade</b>	5.49	5.49	-	1.000
<b>Prior Year Math Z-Score</b>	0.51	0.42	0.09	0.533
<b>Prior Year Literacy Z-Score</b>	0.57	0.57	(0.00)	0.998
<b>% FRL</b>	0.38	0.33	0.05	0.498
<b>% Minority</b>	0.03	0.00	0.03	0.155
<b>% Female</b>	0.54	0.50	0.04	0.626

***Baseline Equivalency for Academy of Service and Tech in Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	72	72	-	
<b>Range of Grades Served</b>	5-6	5-6	-	
<b>Range of Grades in Analysis</b>	5-6	5-6	-	
<b>Average Grade</b>	5.53	5.53	-	1.000
<b>Prior Year Math Z-Score</b>	0.44	0.42	0.02	0.882
<b>Prior Year Literacy Z-Score</b>	0.47	0.47	(0.00)	0.998
<b>% FRL</b>	0.28	0.25	0.03	0.705
<b>% Minority</b>	0.03	0.00	0.03	0.154
<b>% Female</b>	0.51	0.60	(0.08)	0.314

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# ACADEMY OF TECHNOLOGY (VILONIA)

**OVERALL EFFECT**

**+0.029** *Not statistically significant*

**MATHEMATICS**  
Avg. Annual Effect  
(Grade 4)

ELEMENTARY: +0.183\*  
SECONDARY: N/A  
OVERALL: +0.183\*

Vilonia, AR  
District Conversion  
Grades Served: 2-4  
Year Opened: 2004

**LITERACY**  
Avg. Annual Effect  
(Grade 4)

ELEMENTARY: -0.058  
SECONDARY: N/A  
OVERALL: -0.058

Elementary Effects (Benchmark Exams)				
Year	#Charter Students	Benchmark Effect- Math	#Charter Students	Benchmark Effect- Literacy
11-12	21	+0.397	20	-0.056
12-13	22	-0.080	21	-0.076
13-14	23	+0.423 **	22	-0.024
<b>Avg. Annual Effect</b>		<b>+0.183 *</b>		<b>-0.058</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level  
No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

### *Academic Impacts of Academy of Technology Charter School on Math Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	2-4	2-4	2-4	
<b>Total Enrollment</b>	78	78	79	
<b>Grades Included</b>	4	4	4	
<b>Enrollment in Included Grades</b>	28	28	28	
<b>Sample Size (Treatment)</b>	21	22	23	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	75%	79%	82%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>0.397</b>	<b>-0.0797</b>	<b>0.423</b>	<b>**</b>
<b>Robust Standard Errors</b>	(0.279)	(0.162)	(0.182)	<b>+0.183 *</b>
				<b>(0.111)</b>

### *Academic Impacts of Academy of Technology Charter School on Literacy Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	2-4	2-4	2-4	
<b>Total Enrollment</b>	78	78	79	
<b>Grades Included</b>	4	4	4	
<b>Enrollment in Included Grades</b>	28	28	28	
<b>Sample Size (Treatment)</b>	20	21	22	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	71%	75%	79%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.056</b>	<b>-0.076</b>	<b>-0.024</b>	<b>-0.058</b>
<b>Robust Standard Errors</b>	(0.153)	(0.122)	(0.171)	<b>(0.083)</b>

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Math Benchmarks**

***Baseline Equivalency for Academy of Technology in Math, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	21	21	-	
<b>Range of Grades Served</b>	2-4	2-4	-	
<b>Range of Grades in</b>	4	4	-	
<b>Average Grade</b>	4.00	4.00	-	1.000
<b>Prior Year Math Z-Score</b>	0.48	0.48	-	1.000
<b>Prior Year Literacy Z-Score</b>	0.64	0.41	0.23	0.414
<b>% FRL</b>	0.19	0.24	(0.05)	0.707
<b>% Minority</b>	0.00	0.00	-	1.000
<b>% Female</b>	0.48	0.48	-	1.000

***Baseline Equivalency for Academy of Technology in Math, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	22	22	-	
<b>Range of Grades Served</b>	2-4	2-4	-	
<b>Range of Grades in</b>	4	4	-	
<b>Average Grade</b>	4.00	4.00	-	1.000
<b>Prior Year Math Z-Score</b>	0.59	0.59	-	1.000
<b>Prior Year Literacy Z-Score</b>	0.48	0.46	0.01	0.937
<b>% FRL</b>	0.27	0.41	(0.14)	0.340
<b>% Minority</b>	0.00	0.00	-	1.000
<b>% Female</b>	0.45	0.55	(0.09)	0.546

***Baseline Equivalency for Academy of Technology in Math, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	23	23	-	
<b>Range of Grades Served</b>	2-4	2-4	-	
<b>Range of Grades in</b>	4	4	-	
<b>Average Grade</b>	4.00	4.00	-	
<b>Prior Year Math Z-Score</b>	0.40	0.40	-	1.000
<b>Prior Year Literacy Z-Score</b>	0.36	0.44	(0.09)	0.651
<b>% FRL</b>	0.43	0.61	(0.17)	0.238
<b>% Minority</b>	0.00	0.00	-	1.000
<b>% Female</b>	0.43	0.52	(0.09)	0.555

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

<b><i>Baseline Equivalency for Academy of Technology in Literacy, 2011-12</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	20	20	-	
<b>Range of Grades Served</b>	2-4	2-4	-	
<b>Range of Grades in</b>	4	4	-	
<b>Average Grade</b>	4.00	4.00	-	1.000
<b>Prior Year Math Z-Score</b>	0.58	0.54	0.04	0.879
<b>Prior Year Literacy Z-Score</b>	0.51	0.51	0.00	0.999
<b>% FRL</b>	0.30	0.50		0.197
<b>% Minority</b>	0.00	0.00	-	1.000
<b>% Female</b>	0.35	0.55		0.204

<b><i>Baseline Equivalency for Academy of Technology in Literacy, 2012-13</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	21	21	-	
<b>Range of Grades Served</b>	2-4	2-4	-	
<b>Range of Grades in</b>	4	4	-	
<b>Average Grade</b>	4.00	4.00	-	1.000
<b>Prior Year Math Z-Score</b>	0.73	0.71	0.02	0.954
<b>Prior Year Literacy Z-Score</b>	0.64	0.65	(0.00)	0.996
<b>% FRL</b>	0.24	0.39	(0.15)	0.726
<b>% Minority</b>	0.00	0.00	-	1.000
<b>% Female</b>	0.48	0.62	(0.14)	0.352

<b><i>Baseline Equivalency for Academy of Technology in Literacy, 2013-14</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	22	22	-	
<b>Range of Grades Served</b>	2-4	2-4	-	
<b>Range of Grades in</b>	4	4	-	
<b>Average Grade</b>	4.00	4.00	-	
<b>Prior Year Math Z-Score</b>	0.46	0.48	(0.01)	0.942
<b>Prior Year Literacy Z-Score</b>	0.45	0.45	-	1.000
<b>% FRL</b>	0.45	0.32	0.14	0.353
<b>% Minority</b>	0.00	0.00	-	1.000
<b>% Female</b>	0.45	0.59	(0.14)	0.365

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# ARKANSAS VIRTUAL ACADEMY

## OVERALL EFFECT

**-0.077\*\*\***

*Significant at the 1% level*

### MATHEMATICS Avg. Annual Effect (Grades 4-8)

ELEMENTARY: -0.068\*\*\*  
SECONDARY: N/A  
OVERALL: -0.068\*\*\*

Whole State  
Open-Enrollment  
Grades Served: K-8  
Year Opened: 2007

### LITERACY Avg. Annual Effect (Grades 4-8)

ELEMENTARY: -0.087\*\*\*  
SECONDARY: N/A  
OVERALL: -0.087\*\*\*

Elementary Effects (Benchmark Exams)					
Year	#Charter Students	Benchmark Effect- Math		#Charter Students	Benchmark Effect- Literacy
11-12	178	-0.037		179	+0.023
12-13	212	-0.005		213	-0.025
13-14	551	-0.102	***	548	-0.160
<b>Avg. Annual Effect</b>		<b>-0.068</b>	<b>***</b>		<b>-0.087</b>
					<b>***</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

### *Academic Impacts of Arkansas Virtual Academy on Math Benchmarks, 2011-14*

	2011-12	2012-13	2013-14		
<b>Grades Served</b>	K-8	K-8	K-8		
<b>Total Enrollment</b>	500	499	1334		
<b>Grades Included</b>	4-8	4-8	4-8		
<b>Enrollment in Included Grades</b>	247	249	815		
<b>Sample Size (Treatment)</b>	178	212	551		
<b>Sample Size (% of Inc. Grade Enrollment)</b>	72%	85%	68%		
					<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.0367</b>	<b>-0.0051</b>	<b>-0.102</b>	<b>***</b>	<b>-0.068***</b>
<b>Robust Standard Error</b>	(0.061)	(0.051)	(0.032)		(0.025)

### *Academic Impacts of Arkansas Virtual Academy on Literacy Benchmarks, 2011-14*

	2011-12	2012-13	2013-14		
<b>Grades Served</b>	K-8	K-8	K-8		
<b>Total Enrollment</b>	500	499	1334		
<b>Grades Included</b>	4-8	4-8	4-8		
<b>Enrollment in Included Grades</b>	247	249	815		
<b>Sample Size (Treatment)</b>	179	213	548		
<b>Sample Size (% of Inc. Grade Enrollment)</b>	72%	86%	67%		
					<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.0227</b>	<b>-0.0249</b>	<b>-0.160</b>	<b>***</b>	<b>-0.087***</b>
<b>Robust Standard Error</b>	(0.059)	(0.054)	(0.037)		(0.027)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math**

<b>Baseline Equivalency for Arkansas Virtual Academy in Math, 2011-12</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	178	178	-	-
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in</b>	4-8	4-8	-	
<b>Average Grade</b>	5.63	5.63	-	1.000
<b>Prior Year Math Z-Score</b>	-0.04	-0.04	(0.00)	0.999
<b>Prior Year Literacy Z-Score</b>	-0.08	-0.09	0.01	0.964
<b>% Minority</b>	0.12	0.16	(0.03)	0.360
<b>% Female</b>	0.51	0.50	0.01	0.916

<b>Baseline Equivalency for Arkansas Virtual Academy in Math, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	212	212	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in</b>	4-8	4-8	-	
<b>Average Grade</b>	5.73	5.73	-	1.000
<b>Prior Year Math Z-Score</b>	-0.26	-0.26	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.21	-0.19	(0.02)	0.818
<b>% Minority</b>	0.17	0.17	(0.00)	0.898
<b>% Female</b>	0.47	0.50	(0.02)	0.627

<b>Baseline Equivalency for Arkansas Virtual Academy in Math, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	551	551	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in</b>	4-8	4-8	-	
<b>Average Grade</b>	6.05	6.05	-	1.000
<b>Prior Year Math Z-Score</b>	-0.10	-0.10	0.00	1.000
<b>Prior Year Literacy Z-Score</b>	-0.11	-0.15	0.04	0.578
<b>% Minority</b>	0.21	0.20	0.00	0.881
<b>% Female</b>	0.50	0.47	0.04	0.206

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy**

***Baseline Equivalency for Arkansas Virtual Academy in Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	179	179	-	-
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in</b>	4-8	4-8	-	
<b>Average Grade</b>	5.68	5.68	-	1.000
<b>Prior Year Math Z-Score</b>	0.00	0.01	(0.01)	0.933
<b>Prior Year Literacy Z-Score</b>	-0.08	-0.08	(0.00)	0.993
<b>% Minority</b>	0.12	0.15	(0.03)	0.442
<b>% Female</b>	0.49	0.44	0.05	0.340

***Baseline Equivalency for Arkansas Virtual Academy in Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	213	213	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in</b>	4-8	4-8	-	
<b>Average Grade</b>	5.73	5.73	-	1.000
<b>Prior Year Math Z-Score</b>	-0.27	-0.12	(0.15)	0.130
<b>Prior Year Literacy Z-Score</b>	-0.22	-0.22	(0.00)	0.986
<b>% Minority</b>	0.17	0.24	(0.08) *	0.056
<b>% Female</b>	0.47	0.46	0.00	0.923

***Baseline Equivalency for Arkansas Virtual Academy in Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	548	548	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in</b>	4-8	4-8	-	
<b>Average Grade</b>	6.05	6.05	-	1.000
<b>Prior Year Math Z-Score</b>	-0.10	-0.10	0.00	0.946
<b>Prior Year Literacy Z-Score</b>	-0.11	-0.10	(0.00)	0.996
<b>% Minority</b>	0.20	0.22	(0.02)	0.415
<b>% Female</b>	0.50	0.49	0.02	0.587

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# Arkansas Arts Academy (Formerly Benton County School of the Arts)

**OVERALL EFFECT**

**-0.061\*\*\*** *Significant at the 1% level*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 4-10)

ELEMENTARY: -0.049\*  
SECONDARY: -0.222\*\*\*  
OVERALL: -0.080\*\*\*

Rogers, AR  
Open-Enrollment  
Grades Served: K-12  
Year Opened: 2001

**LITERACY**  
Avg. Annual Effect  
(Grades 4-11)

ELEMENTARY: -0.056\*\*  
SECONDARY: +0.014  
OVERALL: -0.042

Elementary Effects (Benchmark Exams)					
Year	#Charter Students	Benchmark Effect- Math		#Charter Students	Benchmark Effect- Literacy
11-12	238	+0.095	*	323	+0.038
12-13	258	-0.030		321	+0.054
13-14	264	-0.177	***	313	-0.209 ***
<b>Avg. Annual Effect</b>		<b>-0.049</b>	<b>*</b>		<b>-0.056</b> <b>**</b>

Secondary (EOC Exams)					
Year	#Charter Students	EOC Effect- Math		#Charter Students	EOC Effect- Literacy
11-12	48	-0.326	***	30	-0.304 *
12-13	43	-0.154		31	+0.144
13-14	48	-0.125		49	+0.126
<b>Avg. Annual Effect</b>		<b>-0.222</b>	<b>***</b>		<b>+0.014</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level  
No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

<i>Academic Impacts of Arkansas Arts Academy on Math Benchmarks, 2011-14</i>						
	2011-12	2012-13	2013-14			
<b>Grades Served</b>	K-12	K-12	K-12			
<b>Total Enrollment</b>	769	776	776			
<b>Grades Included</b>	4-8	4-8	4-8			
<b>Enrollment in Included Grades</b>	323	321	313			
<b>Sample Size (Treatment)</b>	238	258	264			
<b>Sample Size (% of Inc. Grade Enrollment)</b>	74%	80%	84%			
						<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>0.0947 *</b>	<b>-0.030</b>	<b>-0.177 ***</b>			<b>-0.049 *</b>
<b>Robust Standard Error</b>	(0.055)	(0.047)	(0.048)			(0.029)

<i>Academic Impacts of Arkansas Arts Academy on Literacy Benchmarks, 2011-14</i>						
	2011-12	2012-13	2013-14			
<b>Grades Served</b>	K-12	K-12	K-12			
<b>Total Enrollment</b>	769	776	776			
<b>Grades Included</b>	4-8	4-8	4-8			
<b>Enrollment in Included Grades</b>	323	321	313			
<b>Sample Size (Treatment)</b>	211	247	249			
<b>Sample Size (% of Inc. Grade Enrollment)</b>	65%	77%	80%			
						<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.038</b>	<b>+0.054</b>	<b>-0.209 ***</b>			<b>-0.056 **</b>
<b>Robust Standard Error</b>	(0.054)	(0.050)	(0.045)			(0.028)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Secondary Effects

### *Academic Impacts of Arkansas Arts Academy on Geometry EOC, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	K-12	K-12	K-12	
<b>Total Enrollment</b>	769	776	791	
<b>Grades Included</b>	9-11	9-10	9-10	
<b>Enrollment in Included Grades</b>	178	134	127	
<b>Sample Size (Treatment)</b>	48	43	48	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	27%	32%	38%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.326 ***</b>	<b>-0.154</b>	<b>-0.125</b>	<b>-0.222</b>
<b>Robust Standard Error</b>	(0.092)	(0.122)	(0.112)	(0.061)

### *Academic Impacts of Arkansas Arts Academy on 11th Grade Literacy EOC, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	K-12	K-12	K-12	
<b>Total Enrollment</b>	769	776	791	
<b>Grades Included</b>	11	11	11	
<b>Enrollment in 11th Grade</b>	52	51	61	
<b>Sample Size (Treatment)</b>	30	31	49	
<b>Sample Size (% of 11th Grade Enrollment)</b>	58%	61%	80%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.304 *</b>	<b>+0.144</b>	<b>+0.126</b>	<b>+0.014</b>
<b>Robust Standard Error</b>	(0.154)	(0.175)	(0.111)	(0.080)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math Benchmarks**

<b>Baseline Equivalency for Arkansas Arts Academy in Math, 2011-12</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	238	238	-	-
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in</b>	4-8	4-8	-	
<b>Average Grade</b>	6.06	6.06	-	1.000
<b>Prior Year Math Z-Score</b>	0.01	0.01	(0.00)	0.999
<b>Prior Year Literacy Z-Score</b>	0.28	0.05	0.22 ***	0.003
<b>% FRL</b>	0.29	0.34	(0.05)	0.200
<b>% Minority</b>	0.18	0.18	-	1.000
<b>% Female</b>	0.58	0.51	0.07	0.141

<b>Baseline Equivalency for Arkansas Arts Academy in Math, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	258	258	-	-
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in</b>	4-8	4-8	-	
<b>Average Grade</b>	6.03	6.03	-	1.000
<b>Prior Year Math Z-Score</b>	0.21	0.21	(0.00)	0.999
<b>Prior Year Literacy Z-Score</b>	0.27	0.23	0.04	0.587
<b>% FRL</b>	0.31	0.36	(0.05)	0.262
<b>% Minority</b>	0.19	0.16	0.03	0.349
<b>% Female</b>	0.54	0.57	(0.03)	0.535

<b>Baseline Equivalency for Arkansas Arts Academy in Math, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	264	264	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in</b>	4-8	4-8	-	
<b>Average Grade</b>	5.90	5.90	-	1.000
<b>Prior Year Math Z-Score</b>	0.23	0.23	(0.00)	0.999
<b>Prior Year Literacy Z-Score</b>	0.26	0.24	0.02	0.732
<b>% FRL</b>	0.35	0.38	(0.02)	0.587
<b>% Minority</b>	0.22	0.22	-	1.000
<b>% Female</b>	0.52	0.48	0.04	0.338

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Literacy Benchmarks**

<b>Baseline Equivalency for Arkansas Arts Academy in Literacy, 2011-12</b>					
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>	
<b>Number of Observations</b>	211	211	-	-	
<b>Range of Grades Served</b>	K-12	K-12	-		
<b>Range of Grades in</b>	4-8	4-8	-		
<b>Average Grade</b>	6.03	6.03	-	1.000	
<b>Prior Year Math Z-Score</b>	0.05	0.25	(0.20)	**	0.013
<b>Prior Year Literacy Z-Score</b>	0.34	0.34	(0.00)	0.948	
<b>% FRL</b>	0.28	0.41	(0.13)	***	0.006
<b>% Minority</b>	0.19	0.29	(0.09)	**	0.023
<b>% Female</b>	0.58	0.53	0.05	0.327	

<b>Baseline Equivalency for Arkansas Arts Academy in Literacy, 2012-13</b>					
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>	
<b>Number of Observations</b>	247	247	-	-	
<b>Range of Grades Served</b>	K-12	K-12	-		
<b>Range of Grades in</b>	4-8	4-8	-		
<b>Average Grade</b>	6.01	6.01	-	1.000	
<b>Prior Year Math Z-Score</b>	0.23	0.26	(0.02)	0.775	
<b>Prior Year Literacy Z-Score</b>	0.35	0.35	(0.00)	0.967	
<b>% FRL</b>	0.28	0.36	(0.08)	*	0.054
<b>% Minority</b>	0.21	0.28	(0.07)	*	0.060
<b>% Female</b>	0.55	0.56	(0.00)	0.928	

<b>Baseline Equivalency for Arkansas Arts Academy in Literacy, 2013-14</b>					
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>	
<b>Number of Observations</b>	249	249	-		
<b>Range of Grades Served</b>	K-12	K-12	-		
<b>Range of Grades in</b>	4-8	4-8	-		
<b>Average Grade</b>	5.92	5.92	-	1.000	
<b>Prior Year Math Z-Score</b>	0.27	0.21	0.06	0.431	
<b>Prior Year Literacy Z-Score</b>	0.33	0.33	(0.00)	0.999	
<b>% FRL</b>	0.37	0.38	(0.02)	0.711	
<b>% Minority</b>	0.20	0.22	(0.03)	0.442	
<b>% Female</b>	0.53	0.49	0.04	0.370	

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Geometry EOCs**

***Baseline Equivalency for Arkansas Arts Academy in Geometry, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	48	48	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in</b>	9-11	9-11	-	
<b>Average Grade</b>	9.67	9.67	-	1.000
<b>Baseline Algebra Score</b>	0.58	0.58	-	1.000
<b>% FRL</b>	0.21	0.17	0.04	0.601
<b>% Minority</b>	0.10	0.10	-	1.000
<b>% Female</b>	0.73	0.67	0.06	0.505

***Baseline Equivalency for Arkansas Arts Academy in Geometry, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	43	43	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in</b>	9-10	9-10	-	
<b>Average Grade</b>	9.72	9.72	-	1.000
<b>Baseline Algebra Score</b>	0.58	0.58	-	1.000
<b>% FRL</b>	0.21	0.23	(0.02)	0.795
<b>% Minority</b>	0.14	0.09	0.05	0.501
<b>% Female</b>	0.67	0.65	0.02	0.820

***Baseline Equivalency for Arkansas Arts Academy in Geometry, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	48	48	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in</b>	9-10	9-10	-	
<b>Average Grade</b>	9.81	9.81	-	1.000
<b>Baseline Algebra Score</b>	0.18	0.19	(0.00)	0.996
<b>% FRL</b>	0.29	0.25	0.04	0.646
<b>% Minority</b>	0.17	0.15	0.02	0.779
<b>% Female</b>	0.67	0.58	0.08	0.399

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy EOCs**

***Baseline Equivalency for Arkansas Arts Academy in 11th Grade Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
Number of Observations	30	30	-	
Range of Grades Served	K-12	K-12	-	
Range of Grades in Analysis	11	11	-	
Average Grade	11.00	11.00	-	1.000
8th Grade Literacy Score	0.47	0.47	-	1.000
% FRL	0.13	0.17	(0.03)	0.718
% Minority	0.00	0.00	-	1.000
% Female	0.70	0.70	-	1.000

***Baseline Equivalency for Arkansas Arts Academy in 11th Grade Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	31	31	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.67	0.67	0.00	0.999
<b>% FRL</b>	0.16	0.16	-	0.100
<b>% Minority</b>	0.13	0.10	0.03	0.688
<b>% Female</b>	0.68	0.71	(0.03)	0.783

***Baseline Equivalency for Arkansas Arts Academy in 11th Grade Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	49	49	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.50	0.50	(0.00)	0.989
<b>% FRL</b>	0.20	0.27	(0.06)	0.475
<b>% Minority</b>	0.20	0.16	0.04	0.602
<b>% Female</b>	0.63	0.59	0.04	0.678

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# BRUNSON NEW VISION CHARTER SCHOOL

**OVERALL EFFECT**

**+0.252\*\*\*** *Significant at the 1% level*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 4-5)

ELEMENTARY: +0.300\*\*\*  
SECONDARY: N/A  
OVERALL: +0.300\*\*\*

Warren, AR  
District Conversion  
Grades Served: 4-5  
Year Opened: 2013

**LITERACY**  
Avg. Annual Effect  
(Grades 4-5)

ELEMENTARY: +0.180  
SECONDARY: N/A  
OVERALL: +0.180

Elementary Effects (Benchmark Exams)					
Year	#Charter Students	Benchmark Effect- Math		#Charter Students	Benchmark Effect- Literacy
11-12	-	-		-	-
12-13	-	-		-	-
13-14	150	+0.300	***	127	+0.180
<b>Avg. Annual Effect</b>		<b>+0.300</b>	<b>***</b>		<b>+0.180</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level  
No asterisks means the effect is not statistically significant.  
Effect sizes expressed as a percentage of one standard deviation in the test score distribution.  
Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

### *Academic Impacts of Brunson New Vision Charter School on Math Benchmarks, 2011-14*

		2013-14			
Grades Served		4-5			
Total Enrollment		259			
Grades Included		4-5			
Enrollment in Included Grades		259			
Sample Size (Treatment)		150			
Sample Size (% of Inc. Grade Enrollment)		58%			
				<b>Avg. Effect</b>	
OLS Treatment Effect	<b>+0.300</b>	<b>***</b>		<b>+0.300</b>	<b>***</b>
Robust Standard Errors	(0.097)			(0.097)	

### *Academic Impacts of Brunson New Vision Charter School on Literacy Benchmarks, 2011-14*

		2013-14			
Grades Served		4-5			
Total Enrollment		259			
Grades Included		4-5			
Enrollment in Included Grades		259			
Sample Size (Treatment)		127			
Sample Size (% of Inc. Grade Enrollment)		49%			
				<b>Avg. Effect</b>	
OLS Treatment Effect	<b>0.180</b>			<b>+0.180</b>	
Robust Standard Errors	(0.121)			(0.121)	

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Baseline Equivalencies

### ***Baseline Equivalency for Brunson New Vision Charter School in Math, 2013-14***

	Charter	Comparison	Difference	P-Value
<b>Number of Observations</b>	150	150	-	
<b>Range of Grades Served</b>	6-12	6-12	-	
<b>Range of Grades in Analysis</b>	6-8	6-8	-	
<b>Average Grade</b>	4.56	4.56	-	1.000
<b>Prior Year Math Z-Score</b>	-0.33	-0.33	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.20	-0.28	0.08	0.478
<b>% FRL</b>	0.63	0.65	(0.02)	0.718
<b>% Minority</b>	0.35	0.30	0.05	0.325
<b>% Female</b>	0.49	0.49	(0.01)	0.908

### ***Baseline Equivalency for Brunson New Vision Charter School in Literacy, 2013-14***

	Charter	Comparison	Difference	P-Value
<b>Number of Observations</b>	127	127	-	
<b>Range of Grades Served</b>	6-12	6-12	-	
<b>Range of Grades in</b>	6-8	6-8	-	
<b>Average Grade</b>	4.57	4.57	-	1.000
<b>Prior Year Math Z-Score</b>	-0.19	-0.13	(0.06)	0.588
<b>Prior Year Literacy Z-Score</b>	-0.04	-0.04	(0.00)	0.997
<b>% FRL</b>	0.66	0.61	0.06	0.362
<b>% Minority</b>	0.40	0.25	0.15	** 0.011
<b>% Female</b>	0.53	0.43	0.10	0.102

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# CABOT ACE

**OVERALL EFFECT**

**-0.144\*\*\*** *Significant at the 1% level*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 7-10)

ELEMENTARY: +0.076  
SECONDARY: -0.498\*\*\*  
OVERALL: -0.184\*

Cabot, AR  
District Conversion  
Grades Served: 7-12  
Year Opened: 2004

**LITERACY**  
Avg. Annual Effect  
(Grades 7-11)

ELEMENTARY: -0.106  
SECONDARY: -0.158\*\*  
OVERALL: -0.129\*\*

Elementary Effects (Benchmark Exams)				
Year	#Charter Students	Benchmark Effect- Math	#Charter Students	Benchmark Effect- Literacy
11-12	17	+0.028	16	-0.207
12-13	20	+0.197	15	+0.331
13-14	-	-	-	-
<b>Avg. Annual Effect</b>		<b>+0.076</b>		<b>-0.106</b>

Secondary Effects (EOC Exams)				
Year	#Charter Students	EOC Effect- Math	#Charter Students	EOC Effect- Literacy
11-12	19	-0.318	36	-0.480 ***
12-13	20	-0.225	34	-0.097
13-14	54	-0.478 *	48	+0.040
<b>Avg. Annual Effect</b>		<b>-0.310 ***</b>		<b>-0.134 ***</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level  
No asterisks means the effect is not statistically significant.  
Effect sizes expressed as a percentage of one standard deviation in the test score distribution.  
Years/exams for which fewer than 15 students could be matched are excluded from analysis.

Elementary Effects

<b>Academic Impacts of Cabot ACE on Math Benchmarks, 2011-14</b>			
	<b>2011-12</b>	<b>2012-13</b>	
<b>Grades Served</b>	7-12	7-12	
<b>Total Enrollment</b>	191	198	
<b>Grades Included</b>	7-8	7-8	
<b>Enrollment in Included Grades</b>	17	20	
<b>Sample Size (Treatment)</b>	17	15	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	100%	75%	
			<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.028</b>	<b>+0.197</b>	<b>+0.076</b>
<b>Robust Standard Errors</b>	(0.210)	(0.333)	<b>(0.178)</b>

<b>Academic Impacts of Cabot ACE on Literacy Benchmarks, 2011-14</b>			
	<b>2011-12</b>	<b>2012-13</b>	
<b>Grades Served</b>	7-12	7-12	
<b>Total Enrollment</b>	191	198	
<b>Grades Included</b>	7-8	7-8	
<b>Enrollment in Included Grades</b>	17	20	
<b>Sample Size (Treatment)</b>	16	15	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	94%	75%	
			<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.207</b>	<b>+0.331</b>	<b>-0.106</b>
<b>Robust Standard Errors</b>	(0.175)	(0.363)	<b>(0.158)</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Secondary Effects

### *Academic Impacts of Cabot ACE on Geometry EOC, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	7-12	7-12	7-12	
<b>Total Enrollment</b>	191	198	186	
<b>Grades Included</b>	10	10	9-10	
<b>Enrollment in Included Grades</b>	52	46	58	
<b>Sample Size (Treatment)</b>	19	20	54	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	37%	43%	93%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.318</b>	<b>-0.225</b>	<b>-0.478</b> *	<b>-0.310***</b>
<b>Robust Standard Error</b>	(0.202)	(0.189)	(0.278)	(0.124)

### *Academic Impacts of Cabot ACE on 11th Grade Literacy EOC, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	7-12	7-12	7-12	
<b>Total Enrollment</b>	191	198	186	
<b>Grades Included</b>	11	11	11	
<b>Enrollment in 11th Grade</b>	37	46	51	
<b>Sample Size (Treatment)</b>	36	34	48	
<b>Sample Size (% of 11th Grade Enrollment)</b>	97%	74%	94%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.480</b> ***	<b>-0.097</b>	<b>+0.040</b>	<b>-0.134***</b>
<b>Robust Standard Error</b>	(0.130)	(0.128)	(0.098)	(0.067)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math Benchmarks**

<i>Baseline Equivalency for Cabot ACE in Math, 2011-12</i>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	17	17	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	7-8	7-8	-	
<b>Average Grade</b>	8.00	8.00	-	1.000
<b>Prior Year Math Z-Score</b>	-0.13	-0.13	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.18	-0.14	(0.04)	0.880
<b>% FRL</b>	0.35	0.35	-	1.000
<b>% Minority</b>	0.06	0.06	-	1.000
<b>% Female</b>	0.24	0.29	(0.06)	0.697

<i>Baseline Equivalency for Cabot ACE in Math, 2012-13</i>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	15	15	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	7-8	7-8	-	
<b>Average Grade</b>	7.80	7.80	-	1.000
<b>Prior Year Math Z-Score</b>	-0.28	-0.28	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.49	-0.35	(0.15)	0.685
<b>% FRL</b>	0.60	0.67	(0.07)	0.705
<b>% Minority</b>	0.07	0.07	-	1.000
<b>% Female</b>	0.20	0.20	-	1.000

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

<b>Baseline Equivalency for Cabot ACE in Literacy, 2011-12</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	16	16	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	7-8	7-8	-	
<b>Average Grade</b>	7.94	7.94	-	1.000
<b>Prior Year Math Z-Score</b>	-0.14	-0.29	0.16	0.502
<b>Prior Year Literacy Z-Score</b>	-0.22	-0.22	-	1.000
<b>% FRL</b>	0.44	0.44	-	1.000
<b>% Minority</b>	0.06	0.06	-	1.000
<b>% Female</b>	0.25	0.31	(0.06)	0.694

<b>Baseline Equivalency for Cabot ACE in Literacy, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	15	15	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	7-8	7-8	-	
<b>Average Grade</b>	7.80	7.80	-	1.000
<b>Prior Year Math Z-Score</b>	-0.28	-0.41	0.12	0.729
<b>Prior Year Literacy Z-Score</b>	-0.49	-0.49	(0.00)	0.990
<b>% FRL</b>	0.60	0.47	0.13	0.464
<b>% Minority</b>	0.07	0.00	0.07	0.309
<b>% Female</b>	0.20	0.33	(0.13)	0.409

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Geometry EOCs**

***Baseline Equivalency for Cabot ACE in Geometry, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	19	19	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	10	10	-	
<b>Average Grade</b>	10.00	10.00	-	1.000
<b>Baseline Algebra Score</b>	-0.06	-0.06	-	1.000
<b>% FRL</b>	0.47	0.37	0.11	0.511
<b>% Minority</b>	0.11	0.05	0.05	0.547
<b>% Female</b>	0.74	0.74	-	1.000

***Baseline Equivalency for Cabot ACE in Geometry, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	20	20	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	10	10	-	
<b>Average Grade</b>	10.00	10.00	-	1.000
<b>Baseline Algebra Score</b>	-0.11	-0.11	-	1.000
<b>% FRL</b>	0.45	0.50	(0.05)	0.752
<b>% Minority</b>	0.05	0.00	0.05	0.311
<b>% Female</b>	0.45	0.45	-	1.000

***Baseline Equivalency for Cabot ACE in Geometry, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	54	54	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	9-10	9-10	-	
<b>Average Grade</b>	9.93	9.93	-	1.000
<b>Baseline Algebra Score</b>	-0.60	-0.57	(0.02)	0.824
<b>% FRL</b>	0.98	0.65	0.33	*** <0.001
<b>% Minority</b>	0.11	0.59	(0.48)	*** <0.001
<b>% Female</b>	0.37	0.37	-	1.000

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy EOCs**

***Baseline Equivalency for Cabot ACE in 11th Grade Literacy, 2011-12***

	Charter	Comparison	Difference	P-Value
<b>Number of Observations</b>	36	36	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.18	0.18	-	1.000
<b>% FRL</b>	0.33	0.33	-	1.000
<b>% Minority</b>	0.06	0.03	0.03	0.555
<b>% Female</b>	0.53	0.47	0.06	0.637

***Baseline Equivalency for Cabot ACE in 11th Grade Literacy, 2012-13***

	Charter	Comparison	Difference	P-Value
<b>Number of Observations</b>	34	34	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	
<b>8th Grade Literacy Score</b>	0.36	0.36	(0.00)	0.997
<b>% FRL</b>	0.44	0.47	(0.03)	0.808
<b>% Minority</b>	0.06	0.03	0.03	0.555
<b>% Female</b>	0.62	0.59	0.03	0.804

***Baseline Equivalency for Cabot ACE in 11th Grade Literacy, 2013-14***

	Charter	Comparison	Difference	P-Value
<b>Number of Observations</b>	48	48	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	-0.12	-0.11	(0.01)	0.974
<b>% FRL</b>	0.98	0.85	0.13	** 0.027
<b>% Minority</b>	0.79	0.69	0.10	0.245
<b>% Female</b>	0.54	0.48	0.06	0.540

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# CLOVERDALE AEROSPACE TECHNOLOGY

## OVERALL EFFECT

**-0.042\*\*\***

*Significant at the 1% level*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 6-8)

ELEMENTARY: -0.053\*\*\*  
SECONDARY: N/A  
OVERALL: -0.053\*\*\*

Little Rock, AR  
District Conversion  
Grades Served: 6-8  
Year Opened: 2010

**LITERACY**  
Avg. Annual Effect  
(Grades 6-8)

ELEMENTARY: -0.025  
SECONDARY: N/A  
OVERALL: -0.025

Elementary (Benchmark) Effects					
Year	#Charter Students	Benchmark Effect- Math		#Charter Students	Benchmark Effect- Literacy
11-12	526	-0.058	*	521	-0.071 *
12-13	555	-0.073	**	505	-0.014
13-14	503	-0.019		464	+0.003
<b>Avg. Annual Effect</b>		<b>-0.053</b>	<b>***</b>		<b>-0.025</b>

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Elementary Effects

### *Academic Impacts of Cloverdale Aerospace Tech. on Math Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	6-8	6-8	6-8	
<b>Total Enrollment</b>	648	704	654	
<b>Grades Included</b>	6-8	6-8	6-8	
<b>Enrollment in Included Grades</b>	648	704	654	
<b>Sample Size (Treatment)</b>	526	555	503	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	81%	79%	77%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.058 *</b>	<b>-0.073 **</b>	<b>-0.019</b>	<b>-0.053 ***</b>
<b>Robust Standard Errors</b>	(0.030)	(0.029)	(0.034)	<b>(0.018)</b>

### *Academic Impacts of Cloverdale Aerospace Tech. on Literacy Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	6-8	6-8	6-8	
<b>Total Enrollment</b>	648	704	654	
<b>Grades Included</b>	6-8	6-8	6-8	
<b>Enrollment in Included Grades</b>	648	704	654	
<b>Sample Size (Treatment)</b>	521	505	464	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	80%	72%	71%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.071 *</b>	<b>-0.014</b>	<b>+0.003</b>	<b>-0.025</b>
<b>Robust Standard Errors</b>	(0.039)	(0.037)	(0.037)	<b>(0.022)</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math Benchmarks**

<b><i>Baseline Equivalency for Cloverdale Aerospace Tech. in Math, 2011-12</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	526	526	-	
<b>Range of Grades Served</b>	6-8	6-8	-	
<b>Range of Grades in Analysis</b>	6-8	6-8	-	
<b>Average Grade</b>	6.89	6.89	-	1.000
<b>Prior Year Math Z-Score</b>	-0.69	-0.68	(0.00)	0.995
<b>Prior Year Literacy Z-Score</b>	-0.72	-0.66	(0.06)	0.278
<b>% FRL</b>	0.96	0.94	0.02	0.188
<b>% Minority</b>	0.98	0.98	0.00	0.840
<b>% Female</b>	0.49	0.48	0.02	0.622

<b><i>Baseline Equivalency for Cloverdale Aerospace Tech. in Math, 2012-13</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	555	555	-	
<b>Range of Grades Served</b>	6-8	6-8	-	
<b>Range of Grades in Analysis</b>	6-8	6-8	-	
<b>Average Grade</b>	6.92	6.92	-	1.000
<b>Prior Year Math Z-Score</b>	-0.79	-0.79	(0.00)	0.999
<b>Prior Year Literacy Z-Score</b>	-0.70	-0.72	0.03	0.658
<b>% FRL</b>	0.94	0.92	0.02	0.282
<b>% Minority</b>	0.96	0.97	(0.02)	0.142
<b>% Female</b>	0.50	0.51	(0.01)	0.719

<b><i>Baseline Equivalency for Cloverdale Aerospace Tech. in Math, 2013-14</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	503	503	-	-
<b>Range of Grades Served</b>	6-8	6-8	-	
<b>Range of Grades in Analysis</b>	6-8	6-8	-	
<b>Average Grade</b>	7.01	7.01	-	1.000
<b>Prior Year Math Z-Score</b>	-0.80	-0.80	(0.00)	0.997
<b>Prior Year Literacy Z-Score</b>	-0.79	-0.78	(0.01)	0.926
<b>% FRL</b>	0.92	0.92	(0.00)	0.907
<b>% Minority</b>	0.97	0.98	(0.00)	0.691
<b>% Female</b>	0.51	0.49	0.02	0.570

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

***Baseline Equivalency for Cloverdale Aerospace Tech. in Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	521	521	-	
<b>Range of Grades Served</b>	6-8	6-8	-	
<b>Range of Grades in</b>	6-8	6-8	-	
<b>Average Grade</b>	6.91	6.91	-	1.000
<b>Prior Year Math Z-Score</b>	-0.63	-0.73	0.10	0.071
<b>Prior Year Literacy Z-Score</b>	-0.66	-0.66		0.977
<b>% FRL</b>	0.96	0.91	0.05	0.001
<b>% Minority</b>	0.98	0.93	0.05	***
<b>% Female</b>	0.52	0.51	0.01	0.710

***Baseline Equivalency for Cloverdale Aerospace Tech. in Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	505	505	-	
<b>Range of Grades Served</b>	6-8	6-8	-	
<b>Range of Grades in Analysis</b>	6-8	6-8	-	
<b>Average Grade</b>	6.92	6.92	-	1.000
<b>Prior Year Math Z-Score</b>	-0.70	-0.72	0.01	0.777
<b>Prior Year Literacy Z-Score</b>	-0.62	-0.62	(0.00)	0.992
<b>% FRL</b>	0.95	0.92	0.03	**
<b>% Minority</b>	0.96	0.96	0.00	0.876
<b>% Female</b>	0.52	0.51	0.01	0.659

***Baseline Equivalency for Cloverdale Aerospace Tech. in Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	464	464	-	-
<b>Range of Grades Served</b>	6-8	6-8	-	
<b>Range of Grades in Analysis</b>	6-8	6-8	-	
<b>Average Grade</b>	7.00	7.00	-	1.000
<b>Prior Year Math Z-Score</b>	-0.69	-0.76	0.07	0.233
<b>Prior Year Literacy Z-Score</b>	-0.66	-0.66	(0.00)	0.993
<b>% FRL</b>	0.91	0.92	(0.00)	0.906
<b>% Minority</b>	0.98	0.95	0.02	*
<b>% Female</b>	0.52	0.49	0.03	0.431

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

# Covenant Keepers

## OVERALL EFFECT

**+0.017**

*Not statistically significant*

### MATHEMATICS Avg. Annual Effect (Grades 6-10)

ELEMENTARY: -0.059  
SECONDARY: -0.140  
OVERALL: -0.067

Little Rock, AR  
Open-Enrollment  
Grades Served: 6-11  
(2011-12); 6-12 (2012-13);  
6-8 (2013-14)  
Year Opened: 2008

### LITERACY Avg. Annual Effect (Grades 6-11)

ELEMENTARY: +0.141\*\*\*  
SECONDARY: N/A  
OVERALL: +0.141\*\*\*

### Elementary Effects (Benchmark Exams)

Year	#Charter Students	Benchmark Effect- Math	#Charter Students	Benchmark Effect- Literacy	
11-12	72	-0.061	74	+0.188	*
12-13	81	+0.054	74	+0.109	
13-14	135	-0.144	129	+0.135	*
<b>Avg. Annual Effect</b>		<b>-0.059</b>		<b>+0.141</b>	<b>***</b>

### Secondary Effects (EOC Exams)

Year	#Charter Students	EOC Effect- Math	#Charter Students	EOC Effect- Literacy
11-12	15	-0.010	-	-
12-13	16	-0.293	-	-
13-14	-	-	-	-
<b>Avg. Annual Effect</b>		<b>-0.140</b>		<b>-</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

<i>Academic Impacts of Covenant Keepers on Math Benchmarks, 2011-14</i>				
	2011-12	2012-13	2013-14	
<b>Grades Served</b>	6-11	6-12	6-8	
<b>Total Enrollment</b>	238	223	192	
<b>Grades Included</b>	6-8	6-8	6-8	
<b>Enrollment in Included Grades</b>	154	124	192	
<b>Sample Size (Treatment)</b>	72	81	135	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	47%	65%	70%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.061</b>	<b>+0.054</b>	<b>-0.144</b>	<b>**</b>
<b>Robust Standard Error</b>	(0.094)	(0.082)	(0.071)	(0.047)

<i>Academic Impacts of Covenant Keepers on Literacy Benchmarks, 2011-14</i>				
	2011-12	2012-13	2013-14	
<b>Grades Served</b>	6-11	6-12	6-8	
<b>Total Enrollment</b>	238	223	192	
<b>Grades Included</b>	6-8	6-8	6-8	
<b>Enrollment in Included Grades</b>	154	124	192	
<b>Sample Size (Treatment)</b>	74	74	129	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	48%	60%	67%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.188</b>	<b>+0.109</b>	<b>+0.135</b>	<b>* * *</b>
<b>Robust Standard Error</b>	(0.110)	(0.105)	(0.075)	(0.053)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Secondary Effects**

<b><i>Academic Impacts of Covenant Keepers Charter School on Geometry EOC, 2011-13</i></b>			
	<b>2011-12</b>	<b>2012-13</b>	
<b>Grades Served</b>	6-11	6-12	
<b>Total Enrollment</b>	238	223	
<b>Grades Included</b>	10	9-10	
<b>Enrollment in Included Grades</b>	30	70	
<b>Sample Size (Treatment)</b>	15	16	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	50%	23%	
			<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.010</b>	<b>-0.293</b>	<b>-0.140</b>
<b>Robust Standard Error</b>	(0.186)	(0.202)	(0.137)

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Math Benchmarks**

***Baseline Equivalency for Covenant Keepers in Math, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	72	72	-	
<b>Range of Grades Served</b>	6-11	6-11	-	
<b>Range of Grades in Analysis</b>	6-8	6-8	-	
<b>Average Grade</b>	7.24	7.24	-	1.000
<b>Prior Year Math Z-Score</b>	-0.92	-0.92	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.54	-0.64	0.10	0.480
<b>% FRL</b>	0.83	0.83	-	1.000
<b>% Minority</b>	0.92	0.92	-	1.000
<b>% Female</b>	0.54	0.58	(0.04)	0.614

***Baseline Equivalency for Covenant Keepers in Math, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	81	81	-	
<b>Range of Grades Served</b>	6-12	6-12	-	
<b>Range of Grades in Analysis</b>	6-8	6-8	-	
<b>Average Grade</b>	7.16	7.16	-	1.000
<b>Prior Year Math Z-Score</b>	-0.91	-0.91	(0.00)	0.987
<b>Prior Year Literacy Z-Score</b>	-0.63	-0.67	0.04	0.801
<b>% FRL</b>	0.89	0.89	-	1.000
<b>% Minority</b>	0.99	0.95	0.04	0.173
<b>% Female</b>	0.42	0.49	(0.07)	0.344

***Baseline Equivalency for Covenant Keepers in Math, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	135	135	-	
<b>Range of Grades Served</b>	6-12	6-12	-	
<b>Range of Grades in</b>	6-8	6-8	-	
<b>Average Grade</b>	6.98	6.98	-	1.000
<b>Prior Year Math Z-Score</b>	-0.77	-0.77	(0.00)	0.986
<b>Prior Year Literacy Z-Score</b>	-0.84	-0.84	0.00	0.982
<b>% FRL</b>	0.87	0.89	(0.02)	0.577
<b>% Minority</b>	0.99	0.96	0.04 *	0.056
<b>% Female</b>	0.38	0.45	(0.07)	0.217

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

***Baseline Equivalency for Covenant Keepers in Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	74	74	-	
<b>Range of Grades Served</b>	6-11	6-11	-	
<b>Range of Grades in</b>	6-8	6-8	-	
<b>Average Grade</b>	7.24	7.24	-	1.000
<b>Prior Year Math Z-Score</b>	-0.94	-0.62	(0.32)	** 0.033
<b>Prior Year Literacy Z-Score</b>	-0.56	-0.55	(0.01)	0.965
<b>% FRL</b>	0.84	0.80	0.04	0.523
<b>% Minority</b>	0.92	0.76	0.16	*** 0.007
<b>% Female</b>	0.57	0.47	0.09	0.249

***Baseline Equivalency for Covenant Keepers in Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	74	74	-	
<b>Range of Grades Served</b>	6-12	6-12	-	
<b>Range of Grades in</b>	6-8	6-8	-	
<b>Average Grade</b>	7.16	7.16	-	1.000
<b>Prior Year Math Z-Score</b>	-0.89	-0.72	(0.17)	0.227
<b>Prior Year Literacy Z-Score</b>	-0.58	-0.58	(0.01)	0.967
<b>% FRL</b>	0.89	0.86	0.03	0.615
<b>% Minority</b>	0.99	0.85	0.14	*** 0.003
<b>% Female</b>	0.43	0.38	0.05	0.503

***Baseline Equivalency for Covenant Keepers in Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	129	129	-	
<b>Range of Grades Served</b>	6-12	6-12	-	
<b>Range of Grades in</b>	6-8	6-8	-	
<b>Average Grade</b>	6.97	6.97	-	1.000
<b>Prior Year Math Z-Score</b>	-0.79	-0.82	0.02	0.817
<b>Prior Year Literacy Z-Score</b>	-0.83	-0.83	(0.00)	0.982
<b>% FRL</b>	0.86	0.78	0.09	0.076
<b>% Minority</b>	0.99	0.92	0.07	*** 0.006
<b>% Female</b>	0.39	0.39	-	1.000

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Geometry EOCs**

<b>Baseline Equivalency for Covenant Keepers in Geometry, 2011-12</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	15	15	-	
<b>Range of Grades Served</b>	6-12	6-12	-	
<b>Range of Grades in Analysis</b>	10	10	-	
<b>Average Grade</b>	10.00	10.00	-	1.000
<b>Baseline Algebra Score</b>	-1.25	-1.24	(0.01)	0.985
<b>% FRL</b>	1.00	0.93	0.07	0.309
<b>% Minority</b>	0.93	0.87	0.07	0.543
<b>% Female</b>	0.53	0.60	(0.07)	0.713

<b>Baseline Equivalency for Covenant Keepers in Geometry, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	16	16	-	
<b>Range of Grades Served</b>	6-12	6-12	-	
<b>Range of Grades in Analysis</b>	9-10	9-10	-	
<b>Average Grade</b>	9.88	9.88	-	1.000
<b>Baseline Algebra Score</b>	-1.13	-0.97	(0.16)	0.300
<b>% FRL</b>	0.94	0.94	-	1.000
<b>% Minority</b>	1.00	1.00	-	1.000
<b>% Female</b>	0.44	0.44	-	1.000

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# CROSS COUNTY ELEMENTARY TECH



**MATHEMATICS**  
 Avg. Annual Effect  
 (Grades 4-6)

ELEMENTARY: -0.077  
 SECONDARY: N/A  
 OVERALL: -0.077

Cherry Valley, AR  
 District Conversion  
 Grades Served: K-6  
 Year Opened: 2012

**LITERACY**  
 Avg. Annual Effect  
 (Grades 4-6)

ELEMENTARY: +0.063  
 SECONDARY: N/A  
 OVERALL: +0.063

Elementary Effects (Benchmark Exams)				
Year	#Charter Students	Benchmark Effect- Math	#Charter Students	Benchmark Effect- Literacy
11-12	-	-	-	-
12-13	111	-0.066	96	+0.201 *
13-14	128	-0.082	109	+0.007
<b>Avg. Annual Effect</b>		<b>-0.077</b>	<b>+0.063</b>	

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level  
 No asterisks means the effect is not statistically significant.  
 Effect sizes expressed as a percentage of one standard deviation in the test score distribution.  
 Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

<b>Academic Impacts of Cross County Elem Tech on Math Benchmarks, 2011-14</b>			
	<b>2012-13</b>	<b>2013-14</b>	
<b>Grades Served</b>	K-6	K-6	
<b>Total Enrollment</b>	321	367	
<b>Grades Included</b>	4-6	4-6	
<b>Enrollment in Included Grades</b>	134	160	
<b>Sample Size (Treatment)</b>	111	128	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	83%	80%	
			<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.066</b>	<b>-0.082</b>	<b>-0.077</b>
<b>Robust Standard Errors</b>	(0.107)	(0.070)	<b>(0.059)</b>

<b>Academic Impacts of Cross County Elem Tech on Literacy Benchmarks, 2011-14</b>			
	<b>2012-13</b>	<b>2013-14</b>	
<b>Grades Served</b>	K-6	K-6	
<b>Total Enrollment</b>	321	367	
<b>Grades Included</b>	4-6	4-6	
<b>Enrollment in Included Grades</b>	134	160	
<b>Sample Size (Treatment)</b>	96	109	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	72%	68%	
			<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.201 *</b>	<b>+0.007</b>	<b>+0.063</b>
<b>Robust Standard Errors</b>	(0.112)	(0.0711)	<b>(0.060)</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Baseline Equivalencies—Math Benchmarks

<b>Baseline Equivalency for Cross County Elem Tech in Math, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	111	111	-	-
<b>Range of Grades Served</b>	K-6	K-6		
<b>Range of Grades in Analysis</b>	4-6	4-6		
<b>Average Grade</b>	5.04	5.04	-	1.000
<b>Prior Year Math Z-Score</b>	-0.17	-0.17	-	1.000
<b>Prior Year Literacy Z-Score</b>	0.00	-0.01	0.02	0.891
<b>% FRL</b>	0.71	0.73	(0.02)	0.765
<b>% Minority</b>	0.90	0.90	-	1.000
<b>% Female</b>	0.44	0.48	(0.04)	0.590

<b>Baseline Equivalency for Cross County Elem Tech in Math, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	128	128	-	
<b>Range of Grades Served</b>	K-6	K-6	-	
<b>Range of Grades in Analysis</b>	4-6	4-6	-	
<b>Average Grade</b>	5.04	5.04	-	1.000
<b>Prior Year Math Z-Score</b>	-0.16	-0.16	-	1.000
<b>Prior Year Literacy Z-Score</b>	0.01	0.04	(0.03)	0.755
<b>% FRL</b>	0.77	0.79	(0.02)	0.762
<b>% Minority</b>	0.09	0.09	0.01	0.827
<b>% Female</b>	0.46	0.54	(0.08)	0.211

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

***Baseline Equivalency for Cross County Elem Tech in Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	96	96	-	-
<b>Range of Grades Served</b>	K-6	K-6		
<b>Range of Grades in Analysis</b>	4-6	4-6		
<b>Average Grade</b>	5.03	5.03	-	1.000
<b>Prior Year Math Z-Score</b>	-0.15	0.02	(0.17)	0.139
<b>Prior Year Literacy Z-Score</b>	0.08	0.08	(0.00)	0.985
<b>% FRL</b>	0.70	0.73	(0.03)	0.632
<b>% Minority</b>	0.06	0.15	(0.08) *	0.059
<b>% Female</b>	0.49	0.48	0.01	0.885

***Baseline Equivalency for Cross County Elem Tech in Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	109	109	-	
<b>Range of Grades Served</b>	K-6	K-6	-	
<b>Range of Grades in Analysis</b>	4-6	4-6	-	
<b>Average Grade</b>	5.04	5.04	-	1.000
<b>Prior Year Math Z-Score</b>	-0.10	-0.06	(0.04)	0.703
<b>Prior Year Literacy Z-Score</b>	0.12	0.12	(0.00)	0.996
<b>% FRL</b>	0.78	0.79	(0.01)	0.869
<b>% Minority</b>	0.09	0.12	(0.03)	0.508
<b>% Female</b>	0.50	0.50	0.01	0.892

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# CROSS COUNTY NEW TECH HIGH



**MATHEMATICS**  
 Avg. Annual Effect  
 (Grades 7-10)

ELEMENTARY: -0.088  
 SECONDARY: +0.141\*  
 OVERALL: -0.010

Cherry Valley, AR  
 District Conversion  
 Grades Served: 7-12  
 Year Opened: 2011

**LITERACY**  
 Avg. Annual Effect  
 (Grades 7-11)

ELEMENTARY: -0.015  
 SECONDARY: +0.004  
 OVERALL: -0.008

Elementary Effects (Benchmark Exams)				
Year	#Charter Students	Benchmark Effect- Math	#Charter Students	Benchmark Effect- Literacy
11-12	69	+0.075	70	+0.124
12-13	82	-0.284 ***	83	-0.035
13-14	84	+0.033	73	-0.056
<b>Avg. Annual Effect</b>		<b>-0.088</b>		<b>-0.015</b>

Secondary Effects (EOC Exams)				
Year	#Charter Students	EOC Effect- Math	#Charter Students	EOC Effect- Literacy
11-12	28	+0.119	38	-0.311 **
12-13	30	+0.140	32	+0.117
13-14	35	+0.158	32	+0.173
<b>Avg. Annual Effect</b>		<b>+0.141 *</b>		<b>+0.004</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level  
 No asterisks means the effect is not statistically significant.  
 Effect sizes expressed as a percentage of one standard deviation in the test score distribution.  
 Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

<b>Academic Impacts of Cross County New Tech High on Math Benchmarks, 2011-14</b>					
	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>		
<b>Grades Served</b>	7-12	7-12	7-12		
<b>Total Enrollment</b>	318	298	299		
<b>Grades Included</b>	7-8	7-8	7-8		
<b>Enrollment in Included Grades</b>	98	102	104		
<b>Sample Size (Treatment)</b>	69	82	84		
<b>Sample Size (% of Inc. Grade Enrollment)</b>	70%	80%	81%		
				<b>Avg. Effect</b>	
<b>OLS Treatment Effect</b>	<b>+0.075</b>	<b>-0.284 ***</b>	<b>+0.033</b>	<b>-0.088</b>	
<b>Robust Standard Errors</b>	(0.114)	(0.086)	(0.094)	<b>(0.055)</b>	

<b>Academic Impacts of Cross County New Tech High on Literacy Benchmarks, 2011-14</b>					
	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>		
<b>Grades Served</b>	7-12	7-12	7-12		
<b>Total Enrollment</b>	318	298	299		
<b>Grades Included</b>	7-8	7-8	7-8		
<b>Enrollment in Included Grades</b>	98	102	104		
<b>Sample Size (Treatment)</b>	70	83	73		
<b>Sample Size (% of Inc. Grade Enrollment)</b>	71%	81%	70%		
				<b>Avg. Effect</b>	
<b>OLS Treatment Effect</b>	<b>0.124</b>	<b>-0.035</b>	<b>-0.056</b>	<b>-0.015</b>	
<b>Robust Standard Errors</b>	(0.129)	(0.089)	(0.083)	<b>(0.055)</b>	

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Secondary Effects

### *Academic Impacts of Cross County New Tech High School on Geometry EOC, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	7-12	7-12	7-12	
<b>Total Enrollment</b>	318	298	299	
<b>Grades Included</b>	10	10	10	
<b>Enrollment in Included Grades</b>	51	49	53	
<b>Sample Size (Treatment)</b>	28	30	35	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	55%	61%	66%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.119</b>	<b>+0.140</b>	<b>+0.158</b>	<b>+0.141 *</b>
<b>Robust Standard Error</b>	(0.146)	(0.127)	(0.129)	(0.077)

### *Academic Impacts of Cross County New Tech High School on 11th Grade Literacy EOC, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	7-12	7-12	7-12	
<b>Total Enrollment</b>	318	298	299	
<b>Grades Included</b>	11	11	11	
<b>Enrollment in 11th Grade</b>	58	43	47	
<b>Sample Size (Treatment)</b>	38	32	32	
<b>Sample Size (% of 11th Grade Enrollment)</b>	66%	74%	68%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.311 **</b>	<b>+0.117</b>	<b>+0.173</b>	<b>+0.004</b>
<b>Robust Standard Error</b>	(0.131)	(0.135)	(0.118)	(0.074)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math Benchmarks**

***Baseline Equivalency for Cross County New Tech High in Math, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	69	69	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	7-8	7-8	-	
<b>Average Grade</b>	7.48	7.48	-	1.000
<b>Prior Year Math Z-Score</b>	-0.33	-0.33	(0.00)	0.990
<b>Prior Year Literacy Z-Score</b>	-0.16	-0.37	0.21	0.907
<b>% FRL</b>	0.99	0.97	0.01	0.559
<b>% Minority</b>	0.12	0.16	(0.04)	0.459
<b>% Female</b>	0.43	0.38	0.06	0.488

***Baseline Equivalency for Cross County New Tech High in Math, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	82	82	-	-
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in</b>	7-8	7-8	-	
<b>Average Grade</b>	7.44	7.44	-	1.000
<b>Prior Year Math Z-Score</b>	-0.29	-0.29	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.37	-0.42		0.766
<b>% FRL</b>	0.70	0.70	-	1.000
<b>% Minority</b>	0.15	0.16		0.828
<b>% Female</b>	0.46	0.49		0.754

***Baseline Equivalency for Cross County New Tech High in Math, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	84	84	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	7-8	7-8	-	
<b>Average Grade</b>	7.54	7.54	-	1.000
<b>Prior Year Math Z-Score</b>	-0.27	-0.27	(0.00)	0.999
<b>Prior Year Literacy Z-Score</b>	-0.26	-0.29	0.03	0.848
<b>% FRL</b>	0.68	0.73	(0.05)	0.500
<b>% Minority</b>	0.15	0.13	0.02	0.659
<b>% Female</b>	0.48	0.52	(0.05)	0.537

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

***Baseline Equivalency for Cross County New Tech High in Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	70	70	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	7-8	7-8	-	
<b>Average Grade</b>	7.46	7.46	-	1.000
<b>Prior Year Math Z-Score</b>	-0.29	-0.08	(0.21)	0.121
<b>Prior Year Literacy Z-Score</b>	-0.13	-0.12	(0.01)	0.949
<b>% FRL</b>	0.97	0.80	0.17 ***	0.001
<b>% Minority</b>	0.11	0.20	(0.09)	0.164
<b>% Female</b>	0.40	0.54	(0.14)	0.090

***Baseline Equivalency for Cross County New Tech High in Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	83	83	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in</b>	7-8	7-8	-	
<b>Average Grade</b>	7.43	7.43	-	1.000
<b>Prior Year Math Z-Score</b>	-0.30	-0.25	(0.05)	0.709
<b>Prior Year Literacy Z-Score</b>	-0.40	-0.39	(0.00)	0.993
<b>% FRL</b>	0.70	0.71	(0.01)	0.865
<b>% Minority</b>	0.14	0.17	(0.02)	0.669
<b>% Female</b>	0.48	0.52	(0.04)	0.641

***Baseline Equivalency for Cross County New Tech High in Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	73	73	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in</b>	7-8	7-8	-	
<b>Average Grade</b>	7.45	7.45	-	1.000
<b>Prior Year Math Z-Score</b>	-0.22	-0.15	(0.07)	0.577
<b>Prior Year Literacy Z-Score</b>	-0.15	-0.15	(0.00)	0.992
<b>% FRL</b>	0.67	0.73	(0.05)	0.471
<b>% Minority</b>	0.16	0.19	(0.03)	0.665
<b>% Female</b>	0.52	0.52	-	1.000

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Geometry EOCs**

***Baseline Equivalency for Cross County New Tech High School in Geometry, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	28	28	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	10	10	-	
<b>Average Grade</b>	10.00	10.00	-	1.000
<b>Baseline Algebra Score</b>	0.06	0.06	(0.00)	0.939
<b>% FRL</b>	0.93	0.89	0.04	0.639
<b>% Minority</b>	0.07	0.11	(0.04)	0.639
<b>% Female</b>	0.57	0.46	0.11	0.422

***Baseline Equivalency for Cross County New Tech High School in Geometry, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	30	30	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	10	10	-	
<b>Average Grade</b>	10.00	10.00	-	1.000
<b>Baseline Algebra Score</b>	0.06	0.06	-	1.000
<b>% FRL</b>	0.73	0.67	0.07	0.573
<b>% Minority</b>	0.13	0.13	-	1.000
<b>% Female</b>	0.57	0.63	(0.07)	0.598

***Baseline Equivalency for Cross County New Tech High School in Geometry, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	35	35	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	10	10	-	
<b>Average Grade</b>	10.00	10.00	-	1.000
<b>Baseline Algebra Score</b>	0.05	0.06	(0.00)	0.989
<b>% FRL</b>	0.66	0.80	(0.14)	0.179
<b>% Minority</b>	0.06	0.14	(0.09)	0.232
<b>% Female</b>	0.37	0.54	(0.17)	0.150

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy EOCs**

***Baseline Equivalency for Cross County New Tech High School in 11th Grade Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	38	38	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.42	0.42	(0.00)	0.998
<b>% FRL</b>	0.92	0.89	0.03	0.692
<b>% Minority</b>	0.11	0.11	-	1.000
<b>% Female</b>	0.53	0.63	(0.11)	0.353

***Baseline Equivalency for Cross County New Tech High School in 11th Grade Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	32	32	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.34	0.34	(0.00)	0.990
<b>% FRL</b>	0.91	0.75	0.16 *	0.098
<b>% Minority</b>	0.06	0.09	(0.03)	0.641
<b>% Female</b>	0.56	0.69	(0.13)	0.302

***Baseline Equivalency for Cross County New Tech High School in 11th Grade Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	32	32	-	
<b>Range of Grades Served</b>	7-12	7-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.09	0.09	(0.00)	0.991
<b>% FRL</b>	1.00	0.94	0.06	0.151
<b>% Minority</b>	0.16	0.09	0.06	0.450
<b>% Female</b>	0.53	0.44	0.09	0.453

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

# Dreamland Academy

**OVERALL EFFECT**

**+0.293\*\*\*** *Significant at the 1% level*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 4-5)

ELEMENTARY: +0.132  
SECONDARY: N/A  
OVERALL: +0.132

Little Rock, AR  
Open-Enrollment  
Grades Served: K-5  
Year Opened: 2007  
Year Closed: 2012

**LITERACY**  
Avg. Annual Effect  
(Grades 4-5)

ELEMENTARY: +0.607\*\*\*  
SECONDARY: N/A  
OVERALL: +0.607\*\*\*

Elementary Effects (Benchmark Exams)					
Year	#Charter Students	Benchmark Effect- Math	#Charter Students	Benchmark Effect- Literacy	
11-12	41	+0.132	41	+0.607	***
12-13	-	-	-	-	
13-14	-	-	-	-	
<b>Avg. Annual Effect</b>		<b>+0.132</b>		<b>+0.607</b>	<b>***</b>

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level  
No asterisks means the effect is not statistically significant.  
Effect sizes expressed as a percentage of one standard deviation in the test score distribution.  
Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Elementary Effects

<i>Academic Impacts of Dreamland Academy on Math Benchmarks, 2011-12</i>		
2011-12		
Grades Served	K-5	
Total Enrollment	138	
Grades Included	4-5	
Enrollment in Included Grades	44	
Sample Size (Treatment)	41	
Sample Size (% of Inc. Grade Enrollment)	93%	
		<b>Avg. Effect</b>
OLS Treatment Effect	<b>0.132</b>	<b>+0.132</b>
Robust Standard Error	(0.108)	<b>(0.108)</b>

<i>Academic Impacts of Dreamland Academy on Literacy Benchmarks, 2011-12</i>		
2011-12		
Grades Served	K-5	
Total Enrollment	138	
Grades Included	4-5	
Enrollment in Included Grades	44	
Sample Size (Treatment)	41	
Sample Size (% of Inc. Grade Enrollment)	93%	
		<b>Avg. Effect</b>
OLS Treatment Effect	<b>0.607 ***</b>	<b>+0.607 ***</b>
Robust Standard Error	<b>(0.151)</b>	<b>(1.151)</b>

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Benchmarks**

***Baseline Equivalency for Dreamland Academy in Math, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	41	41	-	
<b>Range of Grades Served</b>	K-5	K-5	-	
<b>Range of Grades in Analysis</b>	4-5	4-5	-	
<b>Average Grade</b>	4.51	4.51	-	1.000
<b>Prior Year Math Z-Score</b>	-1.35	-1.35	-	1.000
<b>Prior Year Literacy Z-Score</b>	-1.30	-1.22	(0.08)	0.709
<b>% FRL</b>	0.98	0.98	-	1.000
<b>% Minority</b>	0.98	0.98	-	1.000
<b>% Female</b>	0.49	0.54	(0.05)	0.659

***Baseline Equivalency for Dreamland Academy in Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	41	41	-	
<b>Range of Grades Served</b>	K-5	K-5	-	
<b>Range of Grades in Analysis</b>	4-5	4-5	-	
<b>Average Grade</b>	4.51	4.51	-	1.000
<b>Prior Year Math Z-Score</b>	-1.34	-1.36	0.02	0.918
<b>Prior Year Literacy Z-Score</b>	-1.29	-1.29	(0.00)	0.993
<b>% FRL</b>	0.98	0.93	0.05	0.305
<b>% Minority</b>	0.98	0.88	0.10 *	0.090
<b>% Female</b>	0.49	0.37	0.12	0.264

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# eStem Charter School

**OVERALL EFFECT**

**+0.044\*\*\*** *Significant at the 1% level*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 4-10)

ELEMENTARY: +0.065\*\*\*  
SECONDARY: -0.161\*\*\*  
OVERALL: +0.035\*

Little Rock, AR  
Open-Enrollment  
Grades Served: K-12  
Year Opened: 2008

**LITERACY**  
Avg. Annual Effect  
(Grades 4-11)

ELEMENTARY: +0.052\*\*  
SECONDARY: +0.045  
OVERALL: +0.051\*\*\*

Elementary Effects (Benchmark Exams)					
Year	#Charter Students	Benchmark Effect- Math		#Charter Students	Benchmark Effect- Literacy
11-12	487	+0.028		466	+0.066 *
12-13	552	+0.086	**	539	+0.043
13-14	530	+0.098	**	527	+0.048
<b>Avg. Annual Effect</b>		<b>+0.065</b>	<b>***</b>		<b>+0.052</b> **

Secondary Effects (EOC Exams)					
Year	#Charter Students	EOC Effect- Math		#Charter Students	EOC Effect- Literacy
11-12	117	-0.203	***	97	+0.097
12-13	46	-0.038		81	+0.151
13-14	-	-		114	-0.056
<b>Avg. Annual Effect</b>		<b>-0.161</b>	<b>***</b>		<b>+0.045</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level  
No asterisks means the effect is not statistically significant.  
Effect sizes expressed as a percentage of one standard deviation in the test score distribution.  
Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

### *Academic Impacts of eSTEM Charter School on Math Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	K-12	K-12	K-12	
<b>Total Enrollment</b>	1457	1485	1462	
<b>Grades Included</b>	4-8	4-8	4-8	
<b>Enrollment in Included Grades</b>	591	605	569	
<b>Sample Size (Treatment)</b>	487	552	530	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	82%	91%	93%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.028</b>	<b>+0.086 **</b>	<b>+0.098 **</b>	<b>+0.065 ***</b>
<b>Robust Standard Error</b>	(0.034)	(0.034)	(0.048)	(0.021)

### *Academic Impacts of eSTEM Charter School on Literacy Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	K-12	K-12	K-12	
<b>Total Enrollment</b>	1457	1485	1462	
<b>Grades Included</b>	4-8	4-8	4-8	
<b>Enrollment in Included Grades</b>	591	605	569	
<b>Sample Size (Treatment)</b>	466	539	527	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	79%	89%	93%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.066 *</b>	<b>+0.043</b>	<b>+0.048</b>	<b>+0.052 **</b>
<b>Robust Standard Error</b>	(0.036)	(0.031)	(0.048)	(0.021)

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Secondary Effects

### *Academic Impacts of eSTEM Charter School on Geometry EOC, 2011-13*

	2011-12	2012-13	
<b>Grades Served</b>	K-12	K-12	
<b>Total Enrollment</b>	<b>1,457</b>	<b>1,485</b>	
<b>Grades Included</b>	8-10	8-10	
<b>Enrollment in Included Grades</b>	399	400	
<b>Sample Size (Treatment)</b>	117	46	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	29%	12%	
			<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.203</b> ***	<b>-0.038</b>	<b>-0.161</b> ***
<b>Robust Standard Error</b>	(0.064)	(0.110)	(0.055)

### *Academic Impacts of eSTEM Charter School on 11th Grade Literacy EOC, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	K-12	K-12	K-12	
<b>Total Enrollment</b>	1,457	1,485	1,462	
<b>Grades Included</b>	11	11	11	
<b>Enrollment in 11th Grade</b>	131	117	123	
<b>Sample Size (Treatment)</b>	97	81	114	
<b>Sample Size (% of 11th Grade Enrollment)</b>	74%	69%	93%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.097</b>	<b>+0.151</b>	<b>-0.056</b>	<b>+0.045</b>
<b>Robust Standard Error</b>	(0.080)	(0.095)	(0.072)	(0.047)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math Benchmarks**

***Baseline Equivalency for eSTEM Charter School in Math, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	487	487	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.12	6.12	-	1.000
<b>Prior Year Math Z-Score</b>	-0.01	-0.01	0.00	0.999
<b>Prior Year Literacy Z-Score</b>	0.10	0.13	(0.03)	0.603
<b>% FRL</b>	0.33	0.33	-	1.000
<b>% Minority</b>	0.57	0.55	0.02	0.605
<b>% Female</b>	0.56	0.55	0.01	0.699

***Baseline Equivalency for eSTEM Charter School in Math, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	552	552	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.13	6.13	-	1.000
<b>Prior Year Math Z-Score</b>	-0.06	-0.06	-	1.000
<b>Prior Year Literacy Z-Score</b>	0.06	0.06	(0.00)	0.998
<b>% FRL</b>	0.36	0.36	0.00	0.950
<b>% Minority</b>	0.56	0.55	0.01	0.809
<b>% Female</b>	0.55	0.53	0.02	0.546

***Baseline Equivalency for eSTEM Charter School in Math, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	530	530	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.12	6.12	-	1.000
<b>Prior Year Math Z-Score</b>	0.09	0.09	(0.00)	1.000
<b>Prior Year Literacy Z-Score</b>	0.10	0.10	(0.00)	0.980
<b>% FRL</b>	0.35	0.35	(0.00)	0.949
<b>% Minority</b>	0.55	0.57	(0.02)	0.496
<b>% Female</b>	0.50	0.50	0.01	0.806

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

***Baseline Equivalency for eSTEM Charter School in Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	466	466	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.12	6.12	-	1.000
<b>Prior Year Math Z-Score</b>	0.05	0.05	0.00	0.947
<b>Prior Year Literacy Z-Score</b>	0.15	0.15	(0.00)	0.986
<b>% FRL</b>	0.32	0.37	(0.05)	0.130
<b>% Minority</b>	0.55	0.55	-	1.000
<b>% Female</b>	0.56	0.54	0.02	0.598

***Baseline Equivalency for eSTEM Charter School in Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	539	539	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.14	6.14	-	1.000
<b>Prior Year Math Z-Score</b>	-0.03	-0.02	(0.01)	0.889
<b>Prior Year Literacy Z-Score</b>	0.11	0.11	(0.00)	0.991
<b>% FRL</b>	0.35	0.37	(0.02)	0.446
<b>% Minority</b>	0.45	0.45	0.01	0.854
<b>% Female</b>	0.56	0.51	0.05	0.112

***Baseline Equivalency for eSTEM Charter School in Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	527	527	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.14	6.14	-	1.000
<b>Prior Year Math Z-Score</b>	0.08	0.05	0.04	0.560
<b>Prior Year Literacy Z-Score</b>	0.11	0.11	(0.00)	0.999
<b>% FRL</b>	0.35	0.35	(0.01)	0.847
<b>% Minority</b>	0.55	0.55	0.00	0.901
<b>% Female</b>	0.50	0.51	(0.01)	0.758

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Geometry EOCs**

<b><i>Baseline Equivalency for eSTEM Charter School in Geometry, 2011-12</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	117	117	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	8-10	8-10	-	
<b>Average Grade</b>	8.91	8.91	-	1.000
<b>Baseline Algebra Score</b>	-0.05	-0.04	(0.00)	0.981
<b>% FRL</b>	0.32	0.37	(0.04)	0.492
<b>% Minority</b>	0.33	0.44	(0.10)	0.107
<b>% Female</b>	0.56	0.59	(0.03)	0.597

<b><i>Baseline Equivalency for eSTEM Charter School in Geometry, 2012-13</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	46	46	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	8-10	8-10	-	
<b>Average Grade</b>	9.24	9.24	-	1.000
<b>Baseline Algebra Score</b>	-0.02	-0.01	(0.00)	0.974
<b>% FRL</b>	0.41	0.52	(0.11)	0.296
<b>% Minority</b>	0.67	0.65	0.02	0.825
<b>% Female</b>	0.59	0.72	(0.13)	0.189

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy EOCs**

***Baseline Equivalency for eSTEM Charter School in 11th Grade Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	97	97	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.37	0.37	(0.00)	0.991
<b>% FRL</b>	0.33	0.29	0.04	0.534
<b>% Minority</b>	0.59	0.51	0.08	0.249
<b>% Female</b>	0.57	0.55	0.02	0.773

***Baseline Equivalency for eSTEM Charter School in 11th Grade Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	81	81	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.32	0.32	(0.00)	0.984
<b>% FRL</b>	0.28	0.31	(0.02)	0.731
<b>% Minority</b>	0.63	0.63	-	1.000
<b>% Female</b>	0.62	0.62	0.00	1.000

***Baseline Equivalency for eSTEM Charter School in 11th Grade Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	114	114	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.06	0.06	(0.00)	0.999
<b>% FRL</b>	0.39	0.40	(0.01)	0.892
<b>% Minority</b>	0.67	0.68	(0.02)	0.777
<b>% Female</b>	0.54	0.58	(0.03)	0.593

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# Haas Hall

## OVERALL EFFECT

**+0.091\*\*\***

*Significant at the 1% level*

<b>MATHEMATICS</b> Avg. Annual Effect (Grades 4-10)
ELEMENTARY: +0.460*** SECONDARY: +0.001 OVERALL: +0.093

Fayetteville, AR Open-Enrollment Grades Served: 8-12 Year Opened: 2004
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<b>LITERACY</b> Avg. Annual Effect (Grades 4-11)
ELEMENTARY: +0.028 SECONDARY: +0.301*** OVERALL: +0.090**

### Elementary Effects (Benchmark Exams)

Year	#Charter Students	Benchmark Effect- Math	#Charter Students	Benchmark Effect- Literacy
11-12	-	-	-	-
12-13	24	+0.381	24	+0.276 **
13-14	16	+0.468 ***	15	-0.002
<b>Avg. Annual Effect</b>		<b>+0.460 ***</b>		<b>+0.028</b>

### Secondary Effects (EOC Exams)

Year	#Charter Students	EOC Effect- Math	#Charter Students	EOC Effect- Literacy
11-12	41	-0.203 *	41	+0.367 ***
12-13	51	+0.008	55	+0.202 *
13-14	41	+0.274 **	53	+0.389 **
<b>Avg. Annual Effect</b>		<b>+0.001</b>		<b>+0.301 ***</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

### *Academic Impacts of Haas Hall on Math Benchmarks, 2012-2014*

	2012-13	2013-14		
<b>Grades Served</b>	8-12	8-12		
<b>Total Enrollment</b>	319	320		
<b>Grades Included</b>	8	8		
<b>Enrollment in Included Grades</b>	49	49		
<b>Sample Size (Treatment)</b>	24	16		
<b>Sample Size (% of Inc. Grade Enrollment)</b>	49%	33%		
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.381</b>	<b>+0.468</b>	<b>***</b>	<b>+0.460 ***</b>
<b>Robust Standard Error</b>	(0.233)	(0.161)		(0.129)

### *Academic Impacts of Haas Hall on Literacy Benchmarks, 2012-14*

	2012-13	2013-14		
<b>Grades Served</b>	8-12	8-12		
<b>Total Enrollment</b>	319	320		
<b>Grades Included</b>	8	8		
<b>Enrollment in Included Grades</b>	49	49		
<b>Sample Size (Treatment)</b>	24	15		
<b>Sample Size (% of Inc. Grade Enrollment)</b>	49%	31%		
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.276</b>	<b>**</b>	<b>-0.002</b>	<b>+0.028</b>
<b>Robust Standard Error</b>	(0.127)		(0.045)	(0.040)

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Secondary Effects

### *Academic Impacts of Haas Hall on Geometry EOC, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	8-12	8-12	8-12	
<b>Total Enrollment</b>	316	319	320	
<b>Grades Included</b>	8-10	8-10	8-10	
<b>Enrollment in Included Grades</b>	188	188	182	
<b>Sample Size (Treatment)</b>	41	51	41	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	22%	27%	23%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.203 *</b>	<b>+0.008</b>	<b>+0.274 **</b>	<b>+0.001</b>
<b>Robust Standard Error</b>	(0.113)	(0.099)	(0.134)	(0.065)

### *Academic Impacts of Haas Hall on 11th Grade Literacy EOC, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	8-12	8-12	8-12	
<b>Total Enrollment</b>	316	319	320	
<b>Grades Included</b>	11	11	11	
<b>Enrollment in 11th Grade</b>	73	73	68	
<b>Sample Size (Treatment)</b>	41	55	53	
<b>Sample Size (% of 11th Grade Enrollment)</b>	56%	75%	78%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.367 ***</b>	<b>+0.202 *</b>	<b>+0.389 **</b>	<b>+0.301 ***</b>
<b>Robust Standard Error</b>	(0.127)	(0.112)	(0.154)	(0.074)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math Benchmarks**

<b><i>Baseline Equivalency for Haas Hall in Math, 2012-13</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	24	24	-	
<b>Range of Grades Served</b>	8-12	8-12	-	
<b>Range of Grades in Analysis</b>	8	8	-	
<b>Average Grade</b>	8.00	8.00	-	1.000
<b>Prior Year Math Z-Score</b>	0.96	0.96	(0.00)	0.986
<b>Prior Year Literacy Z-Score</b>	0.85	0.81	0.04	0.758
<b>% FRL</b>	0.08	0.17	(0.08)	0.383
<b>% Minority</b>	0.21	0.17	0.04	0.712
<b>% Female</b>	0.38	0.38	-	1.000

<b><i>Baseline Equivalency for Haas Hall in Math, 2013-14</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	16	16	-	
<b>Range of Grades Served</b>	8-12	8-12	-	
<b>Range of Grades in Analysis</b>	8	8	-	
<b>Average Grade</b>	8.00	8.00	-	1.000
<b>Prior Year Math Z-Score</b>	1.40	1.40	-	1.000
<b>Prior Year Literacy Z-Score</b>	1.00	0.97	0.03	0.733
<b>% FRL</b>	0.06	0.06	-	1.000
<b>% Minority</b>	0.19	0.31	(0.13)	0.414
<b>% Female</b>	0.44	0.31	0.13	0.465

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

<b><i>Baseline Equivalency for Haas Hall in Literacy, 2012-13</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	24	24	-	
<b>Range of Grades Served</b>	8-12	8-12	-	
<b>Range of Grades in Analysis</b>	8	8	-	
<b>Average Grade</b>	8.00	8.00	-	1.000
<b>Prior Year Math Z-Score</b>	0.96	0.94	0.02	0.946
<b>Prior Year Literacy Z-Score</b>	0.85	0.86	(0.01)	0.973
<b>% FRL</b>	0.08	0.25	(0.17)	0.121
<b>% Minority</b>	0.21	0.17	0.04	0.712
<b>% Female</b>	0.38	0.63	(0.25)	* 0.083

<b><i>Baseline Equivalency for Haas Hall in Literacy, 2013-14</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	15	15	-	
<b>Range of Grades Served</b>	8-12	8-12	-	
<b>Range of Grades in Analysis</b>	8	8	-	
<b>Average Grade</b>	8.00	8.00	-	1.000
<b>Prior Year Math Z-Score</b>	1.32	1.18	0.14	0.649
<b>Prior Year Literacy Z-Score</b>	0.98	0.99	(0.01)	0.917
<b>% FRL</b>	0.07	0.27	(0.20)	0.142
<b>% Minority</b>	0.20	0.60	(0.40)	** 0.025
<b>% Female</b>	0.47	0.60	(0.13)	0.464

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Geometry EOCs**

***Baseline Equivalency for Haas Hall in Geometry, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	41	41	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	8-10	8-10	-	
<b>Average Grade</b>	9.41	9.41	-	1.000
<b>Baseline Algebra Score</b>	0.97	0.97	-	1.000
<b>% FRL</b>	0.05	0.05	-	1.000
<b>% Minority</b>	0.05	0.02	0.02	0.556
<b>% Female</b>	0.56	0.59	(0.02)	0.823

***Baseline Equivalency for Haas Hall in Geometry, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	51	51	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	8-10	8-10	-	
<b>Average Grade</b>	9.31	9.31	-	1.000
<b>Baseline Algebra Score</b>	1.07	1.08	(0.01)	0.945
<b>% FRL</b>	0.02	0.29	(0.27)	*** 0.000
<b>% Minority</b>	0.14	0.14	-	1.000
<b>% Female</b>	0.47	0.47	-	1.000

***Baseline Equivalency for Haas Hall in Geometry, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	41	41	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	8-10	8-10	-	
<b>Average Grade</b>	9.46	9.46	-	1.000
<b>Baseline Algebra Score</b>	1.37	1.38	(0.00)	0.985
<b>% FRL</b>	0.05	0.15	(0.10)	0.137
<b>% Minority</b>	0.20	0.12	0.07	0.364
<b>% Female</b>	0.61	0.63	(0.02)	0.820

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Baseline Equivalencies—Literacy EOCs

<b>Baseline Equivalency for Haas Hall in 11th Grade Literacy, 2011-12</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	41	41	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.71	0.71	(0.00)	0.993
<b>% FRL</b>	0.17	0.20	(0.02)	0.775
<b>% Minority</b>	0.12	0.12	-	1.000
<b>% Female</b>	0.59	0.56	0.02	0.823

<b>Baseline Equivalency for Haas Hall in 11th Grade Literacy, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	55	55	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.80	0.80	0.00	0.997
<b>% FRL</b>	0.11	0.11	-	1.000
<b>% Minority</b>	0.93	0.93	-	1.000
<b>% Female</b>	0.58	0.58	-	1.000

<b>Baseline Equivalency for Haas Hall in 11th Grade Literacy, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	53	53	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.83	0.83	0.00	0.993
<b>% FRL</b>	0.04	0.04	-	1.000
<b>% Minority</b>	0.74	0.92	(0.19)	** 0.010
<b>% Female</b>	0.49	0.47	0.02	0.846

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

# IMBODEN AREA CHARTER

**OVERALL EFFECT**

**-0.028**  
*Not statistically significant*

**MATHEMATICS**  
 Avg. Annual Effect  
 (Grades 4-8)

ELEMENTARY: +0.038  
 SECONDARY: N/A  
 OVERALL: +0.038

Imboden, AR  
 Open-Enrollment  
 Grades Served: K-8  
 Year Opened: 2002

**LITERACY**  
 Avg. Annual Effect  
 (Grades 4-8)

ELEMENTARY: -0.110  
 SECONDARY: N/A  
 OVERALL: -0.110

Elementary Effects (Benchmark Exams)				
Year	#Charter Students	Benchmark Effect- Math	#Charter Students	Benchmark Effect- Literacy
11-12	30	-0.001	24	-0.352 **
12-13	20	+0.196	18	+0.282
13-14	16	-0.087	14	-0.312
<b>Avg. Annual Effect</b>		<b>+0.038</b>	<b>-0.110</b>	

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level  
 No asterisks means the effect is not statistically significant.  
 Effect sizes expressed as a percentage of one standard deviation in the test score distribution.  
 Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Elementary Effects

### *Academic Impacts of Imboden Area Charter on Math Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	K-8	K-8	K-8	
<b>Total Enrollment</b>	52	40	54	
<b>Grades Included</b>	4-8	4-8	4-7	
<b>Enrollment in Included Grades</b>	34	21	30	
<b>Sample Size (Treatment)</b>	30	20	16	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	88%	95%	53%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.001</b>	<b>+0.196</b>	<b>-0.087</b>	<b>+0.038</b>
<b>Robust Standard Error</b>	(0.155)	(0.181)	(0.197)	(0.101)

### *Academic Impacts of Imboden Area Charter on Literacy Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	K-8	K-8	K-8	
<b>Total Enrollment</b>	52	40	54	
<b>Grades Included</b>	4-8	4-8	4-8	
<b>Enrollment in Included Grades</b>	34	21	30	
<b>Sample Size (Treatment)</b>	24	18	14	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	71%	86%	47%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.352 **</b>	<b>+0.282</b>	<b>-0.312</b>	<b>-0.110</b>
<b>Robust Standard Error</b>	(0.165)	(0.184)	(0.275)	(0.112)

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Math Benchmarks**

<b>Baseline Equivalency for Imboden Area Charter in Math, 2011-12</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	30	30	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.13	6.13	-	1.000
<b>Prior Year Math Z-Score</b>	-0.29	-0.29	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.28	-0.47	0.19	0.485
<b>% FRL</b>	0.77	0.73	0.03	0.766
<b>% Minority</b>	0.03	0.03	-	1.000
<b>% Female</b>	0.33	0.37	(0.03)	0.787

<b>Baseline Equivalency for Imboden Area Charter in Math, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	20	20	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.35	6.35	-	1.000
<b>Prior Year Math Z-Score</b>	-0.22	-0.22	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.26	-0.31	0.05	0.870
<b>% FRL</b>	0.90	0.90	-	1.000
<b>% Minority</b>	0.00	0.00	-	1.000
<b>% Female</b>	0.40	0.50	(0.10)	0.525

<b>Baseline Equivalency for Imboden Area Charter in Math, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	16	16	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	5.31	6.31	(1.00)	1.000
<b>Prior Year Math Z-Score</b>	-0.35	-0.35	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.59	-0.43	(0.17)	0.605
<b>% FRL</b>	0.75	0.81	(0.06)	0.669
<b>% Minority</b>	0.00	0.00	-	1.000
<b>% Female</b>	0.38	0.63	(0.25)	0.157

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

***Baseline Equivalency for Imboden Area Charter in Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	24	24	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	5.75	5.75	-	1.000
<b>Prior Year Math Z-Score</b>	0.07	-0.09	0.16	0.534
<b>Prior Year Literacy Z-Score</b>	0.06	0.05	0.00	0.996
<b>% FRL</b>	0.79	0.88	(0.08)	0.439
<b>% Minority</b>	0.04	0.00	0.04	0.312
<b>% Female</b>	0.42	0.46	(0.04)	0.771

***Baseline Equivalency for Imboden Area Charter in Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	18	18	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.22	6.22	-	1.000
<b>Prior Year Math Z-Score</b>	-0.09	0.21	(0.31)	0.291
<b>Prior Year Literacy Z-Score</b>	-0.02	-0.01	(0.01)	0.978
<b>% FRL</b>	0.83	0.56	0.28 *	0.070
<b>% Minority</b>	0.06	0.00	0.06	0.310
<b>% Female</b>	0.44	0.39	0.06	0.735

***Baseline Equivalency for Imboden Area Charter in Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	14	14	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	5.71	5.71	-	1.000
<b>Prior Year Math Z-Score</b>	-0.28	0.03	(0.31)	0.406
<b>Prior Year Literacy Z-Score</b>	-0.31	-0.31	0.00	1.000
<b>% FRL</b>	0.86	0.79	0.07	0.622
<b>% Minority</b>	0.00	0.00	-	1.000
<b>% Female</b>	0.57	0.29	0.29	0.127

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# JACKSONVILLE LIGHTHOUSE

## OVERALL EFFECT

**+0.060\*\*\***

*Significant at the 1% level*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 4-10)

ELEMENTARY: +0.083\*\*\*  
SECONDARY: -0.015  
OVERALL: +0.074\*\*\*

Jacksonville, AR

Open-Enrollment

Grades Served: K-8  
(2011-12); K-9 (2012-13);  
K-10 (2013-14)

Year Opened: 2009

**LITERACY**  
Avg. Annual Effect  
(Grades 4-8)

ELEMENTARY: +0.041\*  
SECONDARY: N/A  
OVERALL: +0.041\*

### Elementary Effects (Benchmark Exams)

Year	#Charter Students	Benchmark Effect- Math		#Charter Students	Benchmark Effect- Literacy	
11-12	342	-0.008		323	-0.045	
12-13	379	+0.140	***	376	+0.126	***
13-14	399	+0.099	***	388	+0.029	

**Avg. Annual Effect**

**+0.083** \*\*\*

**+0.041** \*

### Secondary Effects (EOC Exams)

Year	#Charter Students	EOC Effect- Math		#Charter Students	EOC Effect- Literacy	
11-12	-	-		-	-	
12-13	32	-0.057		-	-	
13-14	53	+0.023		-	-	

**Avg. Annual Effect**

**-0.015**

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

### *Academic Impacts of Jacksonville Lighthouse on Math Benchmarks, 2011-14*

	2011-12	2012-13	2013-14			
<b>Grades Served</b>	K-8	K-9	K-10			
<b>Total Enrollment</b>	623	695	816			
<b>Grades Included</b>	4-8	4-8	4-8			
<b>Enrollment in Included Grades</b>	424	428	460			
<b>Sample Size (Treatment)</b>	342	379	399			
<b>Sample Size (% of Inc. Grade Enrollment)</b>	81%	89%	87%			
						<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.008</b>	<b>+0.140</b> ***	<b>+0.099</b> ***			<b>+0.083</b> ***
<b>Robust Standard Error</b>	(0.040)	(0.036)	(0.035)			(0.021)

### *Academic Impacts of Jacksonville Lighthouse on Literacy Benchmarks, 2011-14*

	2011-12	2012-13	2013-14			
<b>Grades Served</b>	K-8	K-9	K-10			
<b>Total Enrollment</b>	623	695	816			
<b>Grades Included</b>	4-8	4-8	4-8			
<b>Enrollment in Included Grades</b>	424	428	460			
<b>Sample Size (Treatment)</b>	323	376	388			
<b>Sample Size (% of Inc. Grade Enrollment)</b>	76%	88%	84%			
						<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.0455</b>	<b>+0.126</b> ***	<b>+0.029</b>			<b>+0.041</b> *
<b>Robust Standard Error</b>	(0.045)	(0.041)	(0.038)			(0.024)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

Secondary Effects

<i>Academic Impacts of Jacksonville Lighthouse on Geometry EOC, 2011-14</i>			
	2012-13	2013-14	
Grades Served	K-9	K-10	
Total Enrollment	695	816	
Grades Included	8-9	8-10	
Enrollment in Included Grades	169	260	
Sample Size (Treatment)	32	53	
Sample Size (% of Inc. Grade Enrollment)	19%	20%	
			<b>Avg. Effect</b>
OLS Treatment Effect	<b>-0.057</b>	<b>+0.023</b>	<b>-0.015</b>
Robust Standard Error	(0.097)	(0.092)	(0.067)

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Math Benchmarks**

<b>Baseline Equivalency for Jacksonville Lighthouse in Math, 2011-12</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	342	342	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.07	6.07	-	1.000
<b>Prior Year Math Z-Score</b>	-0.18	-0.18	0.00	1.000
<b>Prior Year Literacy Z-Score</b>	-0.15	-0.12	(0.03)	0.652
<b>% FRL</b>	0.56	0.56	0.00	0.939
<b>% Minority</b>	0.61	0.62	(0.01)	0.753
<b>% Female</b>	0.52	0.53	(0.01)	0.878

<b>Baseline Equivalency for Jacksonville Lighthouse in Math, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	379	379	-	
<b>Range of Grades Served</b>	K-9	K-9	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.24	6.24	-	1.000
<b>Prior Year Math Z-Score</b>	-0.23	-0.23	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.15	-0.15	(0.01)	0.926
<b>% FRL</b>	0.61	0.59	0.02	0.603
<b>% Minority</b>	0.60	0.59	0.01	0.767
<b>% Female</b>	0.52	0.53	(0.01)	0.771

<b>Baseline Equivalency for Jacksonville Lighthouse in Math, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	399	399	-	
<b>Range of Grades Served</b>	K-10	K-10	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.20	6.20	-	1.00
<b>Prior Year Math Z-Score</b>	-0.08	-0.08	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.08	-0.01	(0.07)	0.231
<b>% FRL</b>	0.66	0.65	0.01	0.710
<b>% Minority</b>	0.65	0.65	-	1.000
<b>% Female</b>	0.50	0.49	0.01	0.777

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Baseline Equivalencies—Literacy Benchmarks

<b>Baseline Equivalency for Jacksonville Lighthouse in Literacy, 2011-12</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	323	323	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.07	6.07	-	1.000
<b>Prior Year Math Z-Score</b>	-0.14	-0.19	0.05	0.452
<b>Prior Year Literacy Z-Score</b>	-0.08	-0.08	(0.00)	0.998
<b>% FRL</b>	0.57	0.55	0.02	0.692
<b>% Minority</b>	0.60	0.63	(0.03)	0.419
<b>% Female</b>	0.53	0.57	(0.04)	0.304

<b>Baseline Equivalency for Jacksonville Lighthouse in Literacy, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	376	376	-	
<b>Range of Grades Served</b>	K-9	K-9	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.23	6.23	-	1.000
<b>Prior Year Math Z-Score</b>	-0.21	-0.29	0.08	0.213
<b>Prior Year Literacy Z-Score</b>	-0.13	-0.13	(0.00)	0.997
<b>% FRL</b>	0.61	0.61	0.01	0.881
<b>% Minority</b>	0.60	0.59	0.01	0.766
<b>% Female</b>	0.52	0.53	(0.01)	0.884

<b>Baseline Equivalency for Jacksonville Lighthouse in Literacy, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	388	388	-	
<b>Range of Grades Served</b>	K-10	K-10	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.20	6.20	-	1.000
<b>Prior Year Math Z-Score</b>	-0.06	-0.12	0.06	0.355
<b>Prior Year Literacy Z-Score</b>	-0.03	-0.03	0.00	1.000
<b>% FRL</b>	0.66	0.66	(0.01)	0.820
<b>% Minority</b>	0.65	0.64	0.01	0.822
<b>% Female</b>	0.51	0.52	(0.01)	0.774

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Baseline Equivalencies—Geometry EOC

<b><i>Baseline Equivalency for Jacksonville Lighthouse in Geometry, 2012-13</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	32	32	-	
<b>Range of Grades Served</b>	K-9	K-9	-	
<b>Range of Grades in Analysis</b>	8-9	8-9	-	
<b>Average Grade</b>	8.91	8.91	-	1.000
<b>Baseline Algebra Score</b>	-0.22	-0.22	-	1.000
<b>% FRL</b>	0.44	0.41	0.03	0.800
<b>% Minority</b>	0.53	0.63	(0.09)	0.448
<b>% Female</b>	0.50	0.47	0.03	0.802

<b><i>Baseline Equivalency for Jacksonville Lighthouse in Geometry, 2013-14</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	52	52	-	
<b>Range of Grades Served</b>	K-10	K-10	-	
<b>Range of Grades in Analysis</b>	8-10	8-10	-	
<b>Average Grade</b>	9.42	9.42	-	1.000
<b>Baseline Algebra Score</b>	-0.35	-0.35	-	1.000
<b>% FRL</b>	0.58	0.60	(0.02)	0.842
<b>% Minority</b>	0.60	0.65	(0.06)	0.543
<b>% Female</b>	0.63	0.62	0.02	0.839

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# KIPP BLYTHEVILLE

## OVERALL EFFECT

**+0.121\*\*\***

*Significant at the 1% level*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 4-8)

ELEMENTARY: +0.095\*\*  
SECONDARY: N/A  
OVERALL: +0.095\*\*

Blytheville, AR

Open-Enrollment

Grades Served: 5-6  
(2011-12); 4-7 (2012-13);  
4-8 (2013-14)

Year Opened: 2010

**LITERACY**  
Avg. Annual Effect  
(Grades 4-8)

ELEMENTARY:  
+0.148\*\*\*  
SECONDARY: N/A

### Elementary Effects (Benchmark Exams)

Year	#Charter Students	Benchmark Effect- Math	#Charter Students	Benchmark Effect- Literacy
11-12	51	-0.188	46	+0.248 **
12-13	123	+0.113 *	123	+0.236 ***
13-14	149	+0.134 **	138	+0.062

**3-Yr Effect**

**+0.095 \*\***

**+0.148 \*\*\***

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Elementary Effects

### *Academic Impacts of KIPP Blytheville on Math Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	5-6	4-7	4-8	
<b>Total Enrollment</b>	119	234	271	
<b>Grades Included</b>	5-6	4-7	4-8	
<b>Enrollment in Included Grades</b>	119	234	271	
<b>Sample Size (Treatment)</b>	51	123	149	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	43%	53%	55%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.188</b>	<b>+0.113 *</b>	<b>+0.134 **</b>	<b>+0.095 **</b>
<b>Robust Standard Error</b>	(0.135)	(0.068)	(0.059)	(0.042)

### *Academic Impacts of KIPP Blytheville on Literacy Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	5-6	4-7	4-8	
<b>Total Enrollment</b>	119	234	271	
<b>Grades Included</b>	5-6	4-7	4-8	
<b>Enrollment in Included Grades</b>	119	234	271	
<b>Sample Size (Treatment)</b>	46	123	138	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	39%	53%	51%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.248 **</b>	<b>+0.236 ***</b>	<b>+0.062</b>	<b>+0.148 ***</b>
<b>Robust Standard Error</b>	(0.107)	(0.075)	(0.059)	(0.043)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math Benchmarks**

<b>Baseline Equivalency for KIPP Blytheville in Math, 2011-12</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	51	51	-	
<b>Range of Grades Served</b>	5-6	5-6	-	
<b>Range of Grades in Analysis</b>	5-6	5-6	-	
<b>Average Grade</b>	5.63	5.63	-	1.000
<b>Prior Year Math Z-Score</b>	-0.24	-0.24	(0.00)	0.980
<b>Prior Year Literacy Z-Score</b>	-0.33	-0.40	0.07	0.713
<b>% FRL</b>	0.90	100.00	(99.10)	** 0.022
<b>% Minority</b>	0.84	0.76	0.08	0.318
<b>% Female</b>	0.55	0.53	0.02	0.691

<b>Baseline Equivalency for KIPP Blytheville in Math, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	123	123	-	
<b>Range of Grades Served</b>	4-7	4-7	-	
<b>Range of Grades in Analysis</b>	4-7	4-7	-	
<b>Average Grade</b>	5.62	5.62	-	1.000
<b>Prior Year Math Z-Score</b>	-0.45	-0.44	(0.01)	0.961
<b>Prior Year Literacy Z-Score</b>	-0.29	-0.37	0.08	0.492
<b>% FRL</b>	0.92	0.98	(0.06)	** 0.046
<b>% Minority</b>	0.85	0.81	0.04	0.392
<b>% Female</b>	0.52	0.59	(0.07)	0.248

<b>Baseline Equivalency for KIPP Blytheville in Math, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	149	149	-	
<b>Range of Grades Served</b>	4-8	4-8	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	5.95	5.95	-	1.000
<b>Prior Year Math Z-Score</b>	-0.45	-0.45	(0.00)	1.000
<b>Prior Year Literacy Z-Score</b>	-0.33	-0.41	0.09	0.416
<b>% FRL</b>	0.86	0.85	0.01	0.744
<b>% Minority</b>	0.89	0.89	0.01	0.854
<b>% Female</b>	0.52	0.49	0.03	0.643

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Literacy Benchmarks**

***Baseline Equivalency for KIPP Blytheville in Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	46	46	-	
<b>Range of Grades Served</b>	5-6	5-6	-	
<b>Range of Grades in Analysis</b>	5-6	5-6	-	
<b>Average Grade</b>	5.59	5.59	-	1.000
<b>Prior Year Math Z-Score</b>	-0.22	-0.36	0.14	0.446
<b>Prior Year Literacy Z-Score</b>	-0.38	-0.37	(0.01)	0.963
<b>% FRL</b>	0.89	1.00	(0.11)	** 0.021
<b>% Minority</b>	0.85	0.83	0.02	0.778
<b>% Female</b>	0.59	0.54	0.04	0.674

***Baseline Equivalency for KIPP Blytheville in Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	123	123	-	
<b>Range of Grades Served</b>	4-7	4-7	-	
<b>Range of Grades in</b>	4-7	4-7	-	
<b>Average Grade</b>	5.51	5.51	-	1.000
<b>Prior Year Math Z-Score</b>	-0.41	-0.29	(0.12)	0.303
<b>Prior Year Literacy Z-Score</b>	-0.19	-0.18	(0.01)	0.957
<b>% FRL</b>	0.91	1.00	(0.09)	*** 0.001
<b>% Minority</b>	0.87	0.78	0.09	* 0.065
<b>% Female</b>	0.53	0.50	0.02	0.702

***Baseline Equivalency for KIPP Blytheville in Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	138	138	-	
<b>Range of Grades Served</b>	4-8	4-8	-	
<b>Range of Grades in</b>	4-8	4-8	-	
<b>Average Grade</b>	5.91	5.91	-	1.000
<b>Prior Year Math Z-Score</b>	-0.33	-0.35	0.02	0.885
<b>Prior Year Literacy Z-Score</b>	-0.22	-0.22	(0.00)	0.994
<b>% FRL</b>	1.00	1.00	-	1.000
<b>% Minority</b>	0.88	0.91	(0.02)	0.556
<b>% Female</b>	0.52	0.59	(0.07)	0.276

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

# KIPP DELTA

**OVERALL EFFECT**

**+0.059\*\*\***

*Significant at the 1% level*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 4-10)

ELEMENTARY: -0.037  
SECONDARY: +0.203  
OVERALL: -0.021

Helena, AR  
Open-Enrollment  
Grades Served: K-3, 5-12  
(2011-12); K-12 (2012-13); K-12 (2013-14)  
Year Opened: 2002

**LITERACY**  
Avg. Annual Effect  
(Grades 4-11)

ELEMENTARY: +0.119\*\*\*  
SECONDARY: +0.258\*\*\*  
OVERALL: +0.142\*\*\*

Elementary Effects (Benchmark Exams)					
Year	#Charter Students	Benchmark Effect- Math		#Charter Students	Benchmark Effect- Literacy
11-12	175	-0.093		147	-0.098
12-13	260	+0.142	**	245	+0.104 *
13-14	215	-0.138	***	185	+0.247 ***
<b>Avg. Annual Effect</b>		<b>-0.037</b>			<b>+0.119 ***</b>

Secondary Effects (EOC Exams)					
Year	#Charter Students	EOC Effect- Math		#Charter Students	EOC Effect- Literacy
11-12	15	+0.313		20	+0.630 ***
12-13	21	+0.141		31	+0.204
13-14	19	+0.374		26	+0.832
<b>Avg. Annual Effect</b>		<b>+0.203</b>			<b>+0.258 ***</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level  
No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

### *Academic Impacts of KIPP Delta on Math Benchmarks, 2011-14*

	2011-12	2012-13	2013-14			
<b>Grades Served</b>	K-3,5-12	K-12	K-12			
<b>Total Enrollment</b>	743	927	905			
<b>Grades Included</b>	5-8	4-8	4-8			
<b>Enrollment in Included Grades</b>	279	392	380			
<b>Sample Size (Treatment)</b>	175	260	215			
<b>Sample Size (% of Inc. Grade Enrollment)</b>	63%	66%	57%			
						<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.093</b>	<b>+0.142</b>	<b>**</b>	<b>-0.138</b>	<b>***</b>	<b>-0.037</b>
<b>Robust Standard Error</b>	(0.062)	(0.059)		(0.053)		(0.033)

### *Academic Impacts of KIPP Delta on Literacy Benchmarks, 2011-14*

	2011-12	2012-13	2013-14			
<b>Grades Served</b>	K-3,5-12	K-12	K-12			
<b>Total Enrollment</b>	743	927	905			
<b>Grades Included</b>	5-8	4-8	4-8			
<b>Enrollment in Included Grades</b>	279	392	380			
<b>Sample Size (Treatment)</b>	147	245	185			
<b>Sample Size (% of Inc. Grade Enrollment)</b>	53%	63%	49%			
						<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.0981</b>	<b>+0.104</b>	<b>*</b>	<b>+0.247</b>	<b>***</b>	<b>+0.119</b> <b>***</b>
<b>Robust Standard Error</b>	(0.074)	(0.061)		(0.055)		(0.036)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Secondary Effects

### *Academic Impacts of KIPP Delta Charter School on Geometry EOC, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	K-3,5-12	K-12	K-12	
<b>Total Enrollment</b>	743	927	905	
<b>Grades Included</b>	9-10	8-10	9-10	
<b>Enrollment in Included Grades</b>	136	229	135	
<b>Sample Size (Treatment)</b>	15	21	19	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	11%	9%	14%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.313</b>	<b>+0.141</b>	<b>+0.374</b>	<b>+0.203</b>
<b>Robust Standard Error</b>	(0.339)	(0.153)	(0.317)	(0.128)

### *Academic Impacts of KIPP Delta Charter School on 11th Grade Literacy EOC, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	K-3,5-12	K-12	K-12	
<b>Total Enrollment</b>	743	927	905	
<b>Grades Included</b>	11	11	11	
<b>Enrollment in 11th Grade</b>	45	55	41	
<b>Sample Size (Treatment)</b>	20	31	26	
<b>Sample Size (% of 11th Grade Enrollment)</b>	44%	56%	63%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.630</b> ***	<b>+0.204</b>	<b>+0.083</b>	<b>+0.258</b> ***
<b>Robust Standard Error</b>	(0.167)	(0.126)	(0.133)	(0.080)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math Benchmarks**

<b><i>Baseline Equivalency for KIPP Delta in Math, 2011-12</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	175	175	-	
<b>Range of Grades Served</b>	K-3,5-12	K-3,5-12	-	
<b>Range of Grades in Analysis</b>	5-8	5-8	-	
<b>Average Grade</b>	6.65	6.65	-	1.000
<b>Prior Year Math Z-Score</b>	-0.46	-0.46	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.20	-0.25	0.04	0.614
<b>% FRL</b>	0.95	0.96	(0.01)	0.792
<b>% Minority</b>	0.98	0.99	(0.02)	0.177
<b>% Female</b>	0.57	0.55	0.02	0.747

<b><i>Baseline Equivalency for KIPP Delta in Math, 2012-13</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	260	260	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.04	6.04	-	1.000
<b>Prior Year Math Z-Score</b>	-0.48	-0.48	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.31	-0.31	0.01	0.910
<b>% FRL</b>	0.98	0.98	-	1.000
<b>% Minority</b>	0.98	0.99	(0.01)	0.412
<b>% Female</b>	0.47	0.46	0.02	0.725

<b><i>Baseline Equivalency for KIPP Delta in Math, 2013-14</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	215	215	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.00	6.00	-	1.000
<b>Prior Year Math Z-Score</b>	-0.34	-0.34	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.29	-0.16	(0.13)	0.110
<b>% FRL</b>	0.99	1.00	(0.00)	0.562
<b>% Minority</b>	0.98	0.97	0.01	0.558
<b>% Female</b>	0.47	0.55	(0.08)	0.101

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

***Baseline Equivalency for KIPP Delta in Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	147	147	-	
<b>Range of Grades Served</b>	K-3,5-12	K-3,5-12	-	
<b>Range of Grades in Analysis</b>	5-8	5-8	-	
<b>Average Grade</b>	6.69	6.69	-	1.000
<b>Prior Year Math Z-Score</b>	-0.38	-0.29	(0.08)	0.375
<b>Prior Year Literacy Z-Score</b>	-0.09	-0.09	(0.00)	0.996
<b>% FRL</b>	0.96	0.95	0.01	0.777
<b>% Minority</b>	0.98	0.98	-	1.000
<b>% Female</b>	0.53	0.54	(0.01)	0.907

***Baseline Equivalency for KIPP Delta in Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	245	245	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.09	6.09	-	1.000
<b>Prior Year Math Z-Score</b>	-0.43	-0.38	(0.06)	0.428
<b>Prior Year Literacy Z-Score</b>	-0.19	-0.19	(0.00)	0.991
<b>% FRL</b>	0.95	0.98	(0.03)	0.101
<b>% Minority</b>	0.98	0.99	(0.00)	0.703
<b>% Female</b>	0.50	0.50	-	0.100

***Baseline Equivalency for KIPP Delta in Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	185	185	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.11	6.11	-	1.000
<b>Prior Year Math Z-Score</b>	-0.21	-0.33	0.12	0.160
<b>Prior Year Literacy Z-Score</b>	-0.08	-0.08	(0.00)	0.977
<b>% FRL</b>	0.92	0.99	(0.07)	*** 0.001
<b>% Minority</b>	0.02	0.03	(0.01)	0.736
<b>% Female</b>	0.49	0.52	(0.03)	0.533

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Geometry EOC**

***Baseline Equivalency for KIPP Delta in Geometry, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	15	15	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	9-10	9-10	-	
<b>Average Grade</b>	9.27	9.27	-	1.000
<b>Baseline Algebra Score</b>	-0.17	-0.15	(0.02)	0.939
<b>% FRL</b>	0.80	0.93	(0.13)	0.283
<b>% Minority</b>	0.00	0.00	-	1.000
<b>% Female</b>	0.53	0.47	0.07	0.715

***Baseline Equivalency for KIPP Delta in Geometry, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	21	2	19.00	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	8-10	8-10	-	
<b>Average Grade</b>	9.52	9.52	-	1.000
<b>Baseline Algebra Score</b>	-0.06	-0.06	-	1.000
<b>% FRL</b>	0.90	0.95	(0.05)	0.549
<b>% Minority</b>	1.00	1.00	-	1.000
<b>% Female</b>	0.67	0.67	-	1.000

***Baseline Equivalency for KIPP Delta in Geometry, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	19	19	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	9-10	9-10	-	
<b>Average Grade</b>	9.63	9.63	-	1.000
<b>Baseline Algebra Score</b>	-0.34	-0.34	(0.00)	0.996
<b>% FRL</b>	0.89	0.95	(0.05)	0.547
<b>% Minority</b>	1.00	1.00	-	1.000
<b>% Female</b>	0.68	0.58	0.11	0.501

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy EOC**

<b>Baseline Equivalency for KIPP Delta in 11th Grade Literacy, 2011-12</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	20	20	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.29	0.29	-	1.000
<b>% FRL</b>	1.00	1.00	-	1.000
<b>% Minority</b>	0.95	1.00	(0.05)	0.311
<b>% Female</b>	0.65	0.75	(0.10)	0.490

<b>Baseline Equivalency for KIPP Delta in 11th Grade Literacy, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	31	31	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.16	0.16	-	1.000
<b>% FRL</b>	0.97	1.00	(0.03)	0.313
<b>% Minority</b>	1.00	1.00	-	1.000
<b>% Female</b>	0.61	0.58	0.03	0.796

<b>Baseline Equivalency for KIPP Delta in 11th Grade Literacy, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	26	26	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.33	0.33	(0.00)	0.997
<b>% FRL</b>	0.85	0.92	(0.08)	0.385
<b>% Minority</b>	1.00	1.00	-	1.000
<b>% Female</b>	0.65	0.69	(0.04)	0.768

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# LINCOLN MIDDLE ACADEMY OF EXCELLENCE

**OVERALL EFFECT**

**-0.059\*\*\***

*Significant at the 1% level*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 5-6)

ELEMENTARY: +0.014  
SECONDARY: N/A  
OVERALL: +0.014

Forrest City, AR  
District Conversion  
Grades Served: 5-6  
Year Opened: 2010

**LITERACY**  
Avg. Annual Effect  
(Grades 5-6)

ELEMENTARY: -0.155\*\*\*  
SECONDARY: N/A  
OVERALL: -0.155\*\*\*

Elementary Effects (Benchmark Exams)						
Year	#Charter Students	Benchmark Effect- Math		#Charter Students	Benchmark Effect- Literacy	
11-12	300	-0.002		286	-0.174	***
12-13	262	-0.118	**	267	-0.229	***
13-14	219	+0.197	***	175	-0.009	
<b>Avg. Annual Effect</b>		<b>+0.014</b>			<b>-0.155</b>	<b>***</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

### *Academic Impacts of Lincoln Academy of Excellence on Math Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	5-6	5-6	5-6	
<b>Total Enrollment</b>	497	468	417	
<b>Grades Included</b>	5-6	5-6	5-6	
<b>Enrollment in Included Grades</b>	497	468	417	
<b>Sample Size (Treatment)</b>	300	262	219	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	60%	56%	53%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.002</b>	<b>-0.118 **</b>	<b>+0.197 ***</b>	+0.014
<b>Robust Standard Errors</b>	(0.045)	(0.047)	(0.051)	(0.027)

### *Academic Impacts of Lincoln Academy of Excellence on Literacy Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	5-6	5-6	5-6	
<b>Total Enrollment</b>	497	468	417	
<b>Grades Included</b>	5-6	5-6	5-6	
<b>Enrollment in Included Grades</b>	497	468	417	
<b>Sample Size (Treatment)</b>	286	267	175	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	58%	57%	42%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.174 ***</b>	<b>-0.229 ***</b>	<b>-0.009</b>	-0.155 ***
<b>Robust Standard Errors</b>	(0.050)	(0.051)	(0.064)	(0.031)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math Benchmarks**

***Baseline Equivalency for Lincoln Academy of Excellence in Math, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	300	300	-	
<b>Range of Grades Served</b>	5-6	5-6	-	
<b>Range of Grades in Analysis</b>	5-6	5-6	-	
<b>Average Grade</b>	5.51	5.51	-	1.000
<b>Prior Year Math Z-Score</b>	-0.50	-0.50	(0.01)	0.939
<b>Prior Year Literacy Z-Score</b>	-0.46	-0.51	0.05	0.529
<b>% FRL</b>	1.00	0.91	0.09	***
<b>% Minority</b>	0.81	0.73	0.08	**
<b>% Female</b>	0.54	0.51	0.03	0.414

***Baseline Equivalency for Lincoln Academy of Excellence in Math, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	262	262	-	
<b>Range of Grades Served</b>	5-6	5-6	-	
<b>Range of Grades in Analysis</b>	5-6	5-6	-	
<b>Average Grade</b>	5.52	5.52	-	1.000
<b>Prior Year Math Z-Score</b>	-0.41	-0.41	(0.00)	0.995
<b>Prior Year Literacy Z-Score</b>	-0.49	-0.52	0.03	0.760
<b>% FRL</b>	0.91	0.85	0.06	**
<b>% Minority</b>	0.80	0.77	0.03	0.339
<b>% Female</b>	0.56	0.45	0.11	0.011

***Baseline Equivalency for Lincoln Academy of Excellence in Math, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	219	219	-	
<b>Range of Grades Served</b>	5-6	5-6	-	
<b>Range of Grades in Analysis</b>	5-6	5-6	-	
<b>Average Grade</b>	5.53	5.53	-	1.000
<b>Prior Year Math Z-Score</b>	-0.49	-0.49	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.50	-0.46	(0.04)	0.665
<b>% FRL</b>	1.00	1.00	-	1.000
<b>% Minority</b>	0.82	0.82	-	1.000
<b>% Female</b>	0.48	0.51	(0.03)	0.566

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

***Baseline Equivalency for Lincoln Academy of Excellence in Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	286	286	-	
<b>Range of Grades Served</b>	5-6	5-6	-	
<b>Range of Grades in</b>	5-6	5-6	-	
<b>Average Grade</b>	5.50	5.50	-	1.000
<b>Prior Year Math Z-Score</b>	-0.43	-0.46	0.02	0.760
<b>Prior Year Literacy Z-</b>	-0.47	-0.46	(0.01)	0.915
<b>% FRL</b>	1.00	0.88	0.11 ***	0.000
<b>% Minority</b>	0.82	0.66	0.16 ***	0.000
<b>% Female</b>	0.55	0.53	0.02	0.675

***Baseline Equivalency for Lincoln Academy of Excellence in Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	267	267	-	
<b>Range of Grades Served</b>	5-6	5-6	-	
<b>Range of Grades in</b>	5-6	5-6	-	
<b>Average Grade</b>	5.48	5.48	-	1.000
<b>Prior Year Math Z-Score</b>	-0.24	-0.35	0.11	0.178
<b>Prior Year Literacy Z-</b>	-0.44	-0.44	(0.01)	0.950
<b>% FRL</b>	0.89	0.89	-	1.000
<b>% Minority</b>	0.86	0.68	0.18	0.000
<b>% Female</b>	0.54	0.50	0.04	0.341

***Baseline Equivalency for Lincoln Academy of Excellence in Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	175	175	-	
<b>Range of Grades Served</b>	5-6	5-6	-	
<b>Range of Grades in Analysis</b>	5-6	5-6	-	
<b>Average Grade</b>	5.50	5.50	-	1.000
<b>Prior Year Math Z-Score</b>	-0.35	-0.61	0.26	0.009
<b>Prior Year Literacy Z-Score</b>	-0.47	-0.46	(0.00)	0.997
<b>% FRL</b>	1.00	1.00	-	1.000
<b>% Minority</b>	0.86	0.85	0.01	0.880
<b>% Female</b>	0.50	0.50	-	1.000

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

# LINCOLN HIGH SCHOOL NEW TECH

## OVERALL EFFECT

**-0.080\*\***

*Significant at the 5% level*

### MATHEMATICS Avg. Annual Effect (Grades 8-11)

ELEMENTARY: -0.271\*\*\*  
SECONDARY: +0.054  
OVERALL: -0.047

Lincoln, AR  
District Conversion  
Grades Served: 8-12  
Year Opened: 2012

### LITERACY Avg. Annual Effect (Grades 8-11)

ELEMENTARY: +0.041  
SECONDARY: -0.189\*\*\*  
OVERALL: -0.109\*\*

### Elementary Effects (Benchmark Exams)

Year	#Charter Students	Benchmark Effect- Math	#Charter Students	Benchmark Effect- Literacy
11-12	-	-	-	-
12-13	75	-0.544	72	-0.494
13-14	74	-0.243 **	71	+0.060
<b>Avg. Annual Effect</b>		<b>-0.271 ***</b>		<b>+0.041</b>

### Secondary Effects (EOC Exams)

Year	#Charter Students	EOC Effect- Math	#Charter Students	EOC Effect- Literacy
11-12	-	-	-	-
12-13	41	-0.212 *	69	-0.136
13-14	69	+0.216 **	70	-0.244 **
<b>Avg. Annual Effect</b>		<b>+0.054</b>		<b>-0.189 ***</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

### *Academic Impacts of Lincoln High School New Tech on Math Benchmarks, 2012-14*

	2012-13	2013-14	
<b>Grades Served</b>	8-12	8-12	
<b>Total Enrollment</b>	511	518	
<b>Grades Included</b>	8	8	
<b>Enrollment in Included Grades</b>	101	102	
<b>Sample Size (Treatment)</b>	75	74	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	74%	73%	
			<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.544</b>	<b>-0.243</b> **	<b>-0.271</b> ***
<b>Robust Standard Errors</b>	(0.337)	(0.107)	<b>0.102</b>

### *Academic Impacts of Lincoln High School New Tech on Literacy Benchmarks, 2012-14*

	2012-13	2013-14	
<b>Grades Served</b>	8-12	8-12	
<b>Total Enrollment</b>	511	518	
<b>Grades Included</b>	8	8	
<b>Enrollment in Included Grades</b>	101	102	
<b>Sample Size (Treatment)</b>	72	71	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	71%	70%	
			<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.494</b>	<b>+0.060</b>	<b>+0.041</b>
<b>Robust Standard Errors</b>	(0.501)	(0.093)	<b>(0.091)</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Secondary Effects

<b>Academic Impacts of Lincoln High School New Tech on Geometry EOC, 2012-14</b>					
	<b>2012-13</b>		<b>2013-14</b>		
<b>Grades Served</b>	8-12		8-12		
<b>Total Enrollment</b>	511		518		
<b>Grades Included</b>	9-11		9-11		
<b>Enrollment in Included Grades</b>	325		322		
<b>Sample Size (Treatment)</b>	41		69		
<b>Sample Size (% of Inc. Grade Enrollment)</b>	13%		21%		
				<b>Avg. Effect</b>	
<b>OLS Treatment Effect</b>	<b>-0.212</b>	*	<b>+0.216</b>	**	<b>+0.054</b>
<b>Robust Standard Error</b>	(0.112)		(0.087)		(0.069)

<b>Academic Impacts of Lincoln High School New Tech on 11th Grade Literacy EOC, 2012-14</b>					
	<b>2012-13</b>		<b>2013-14</b>		
<b>Grades Served</b>	8-12		8-12		
<b>Total Enrollment</b>	511		518		
<b>Grades Included</b>	11		11		
<b>Enrollment in 11th Grade</b>	102		106		
<b>Sample Size (Treatment)</b>	69		70		
<b>Sample Size (% of 11th Grade Enrollment)</b>	68%		66%		
				<b>Avg. Effect</b>	
<b>OLS Treatment Effect</b>	<b>-0.136</b>		<b>-0.244</b>	**	<b>-0.189</b> ***
<b>Robust Standard Error</b>	(0.093)		(0.095)		(0.067)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math Benchmarks**

<b>Baseline Equivalency for Lincoln High School New Tech in Math, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	75	75	-	-
<b>Range of Grades Served</b>	8-12	8-12		
<b>Range of Grades in Analysis</b>	8	8		
<b>Average Grade</b>	8.00	8.00	-	1.000
<b>Prior Year Math Z-Score</b>	-0.11	-0.11	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.04	-0.03	(0.01)	0.947
<b>% FRL</b>	0.71	0.71	-	1.000
<b>% Minority</b>	0.17	0.15	0.03	0.656
<b>% Female</b>	0.53	0.47	0.07	0.414

<b>Baseline Equivalency for Lincoln High School New Tech in Math, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	74	74	-	
<b>Range of Grades Served</b>	8-12	8-12	-	
<b>Range of Grades in Analysis</b>	8	8	-	
<b>Average Grade</b>	8.00	8.00	-	1.000
<b>Prior Year Math Z-Score</b>	-0.07	-0.07	-	1.000
<b>Prior Year Literacy Z-Score</b>	0.03	0.08	(0.05)	0.750
<b>% FRL</b>	0.66	0.66	-	1.000
<b>% Minority</b>	0.14	0.11	0.03	0.615
<b>% Female</b>	0.47	0.49	(0.01)	0.869

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

<i>Baseline Equivalency for Lincoln High School New Tech in Literacy, 2012-13</i>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	72	72		-
<b>Range of Grades Served</b>	8-12	8-12		
<b>Range of Grades in Analysis</b>	8	8		
<b>Average Grade</b>	8.00	8.00	-	1.000
<b>Prior Year Math Z-Score</b>	-0.03	0.03	(0.06)	0.712
<b>Prior Year Literacy Z-Score</b>	0.12	0.12	(0.00)	0.997
<b>% FRL</b>	0.74	0.69	0.04	0.580
<b>% Minority</b>	0.17	0.18	(0.01)	0.826
<b>% Female</b>	0.51	0.46	0.06	0.505

<i>Baseline Equivalency for Lincoln High School New Tech in Literacy, 2013-14</i>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	71	71	-	
<b>Range of Grades Served</b>	8-12	8-12	-	
<b>Range of Grades in Analysis</b>	8	8	-	
<b>Average Grade</b>	8.00	8.00	-	1.000
<b>Prior Year Math Z-Score</b>	0.20	0.15	0.05	0.741
<b>Prior Year Literacy Z-Score</b>	0.29	0.29	(0.00)	0.993
<b>% FRL</b>	0.66	0.63	0.03	0.725
<b>% Minority</b>	0.21	0.10	0.11	0.064
<b>% Female</b>	0.59	0.52	0.07	0.398

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Geometry EOCs**

<b><i>Baseline Equivalency for Lincoln High School New Tech in Geometry, 2012-13</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	41	41	-	
<b>Range of Grades Served</b>	8-12	8-12	-	
<b>Range of Grades in Analysis</b>	9-11	9-11	-	
<b>Average Grade</b>	9.71	9.71	-	1.000
<b>Baseline Algebra Score</b>	0.05	0.05	(0.00)	0.997
<b>% FRL</b>	0.54	0.61	(0.07)	0.503
<b>% Minority</b>	0.10	0.07	0.02	0.693
<b>% Female</b>	0.54	0.46	0.07	0.508

<b><i>Baseline Equivalency for Lincoln High School New Tech in Geometry, 2013-14</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	69	69	-	
<b>Range of Grades Served</b>	8-12	8-12	-	
<b>Range of Grades in Analysis</b>	9-11	9-11	-	
<b>Average Grade</b>	9.87	9.87	-	1.000
<b>Baseline Algebra Score</b>	-0.13	-0.13	(0.00)	0.996
<b>% FRL</b>	0.64	0.67	(0.03)	0.721
<b>% Minority</b>	0.19	0.20	(0.01)	0.830
<b>% Female</b>	0.51	0.51	-	1.000

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy EOCs**

***Baseline Equivalency for Lincoln High School New Tech in 11th Grade Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	69	69	-	
<b>Range of Grades Served</b>	8-12	8-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	
<b>8th Grade Literacy Score</b>	0.27	0.27	(0.00)	0.999
<b>% FRL</b>	0.65	0.67	(0.01)	0.857
<b>% Minority</b>	0.16	0.23	(0.07)	0.283
<b>% Female</b>	0.49	0.48	0.01	0.865

***Baseline Equivalency for Lincoln High School New Tech in 11th Grade Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	70	70	-	
<b>Range of Grades Served</b>	8-12	8-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.06	0.06	(0.00)	0.998
<b>% FRL</b>	0.59	0.59	-	1.000
<b>% Minority</b>	0.13	0.07	0.06	0.260
<b>% Female</b>	0.47	0.50	(0.03)	0.735

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

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*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# LISA ACADEMY

**OVERALL EFFECT**

**+0.020** *Not statistically significant*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 6-10)

ELEMENTARY: +0.032  
SECONDARY: -0.174\*\*  
OVERALL: +0.011

Little Rock, AR  
Open-Enrollment  
Grades Served: 6-12  
Year Opened: 2004

**LITERACY**  
Avg. Annual Effect  
(Grades 6-11)

ELEMENTARY: +0.023  
SECONDARY: +0.123  
OVERALL: +0.030

Elementary Effects (Benchmark Exams)				
Year	#Charter Students	Benchmark Effect- Math	#Charter Students	Benchmark Effect- Literacy
11-12	259	+0.058	272	+0.101 **
12-13	372	-0.003	373	+0.090
13-14	358	+0.051	364	-0.072 **
<b>Avg. Annual Effect</b>		<b>+0.032</b>	<b>+0.023</b>	

Secondary Effects (EOC Exams)				
Year	#Charter Students	EOC Effect- Math	#Charter Students	EOC Effect- Literacy
11-12	31	-0.069	30	+0.103
12-13	48	-0.010	34	+0.384 **
13-14	54	-0.439 ***	36	-0.054
<b>Avg. Annual Effect</b>		<b>-0.174 **</b>	<b>+0.123</b>	

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

### *Academic Impacts of LISA Academy on Math Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	6-12	6-12	6-12	
<b>Total Enrollment</b>	599	792	799	
<b>Grades Included</b>	6-8	6-8	6-8	
<b>Enrollment in Included Grades</b>	418	554	539	
<b>Sample Size (Treatment)</b>	259	372	358	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	62%	67%	66%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.058</b>	<b>-0.003</b>	<b>+0.051</b>	<b>+0.032</b>
<b>Robust Standard Error</b>	(0.048)	(0.040)	(0.042)	(0.025)

### *Academic Impacts of LISA Academy on Literacy Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	6-12	6-12	6-12	
<b>Total Enrollment</b>	599	792	799	
<b>Grades Included</b>	6-8	6-8	6-8	
<b>Enrollment in Included Grades</b>	418	554	539	
<b>Sample Size (Treatment)</b>	272	373	364	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	65%	67%	68%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>0.101 **</b>	<b>+0.060</b>	<b>-0.072 **</b>	<b>+0.023</b>
<b>Robust Standard Error</b>	(0.040)	(0.041)	(0.036)	(0.023)

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Secondary Effects

<i>Academic Impacts of LISA Academy Charter School on Geometry EOC, 2011-14</i>				
	2011-12	2012-13	2013-14	
<b>Grades Served</b>	6-12	6-12	6-12	
<b>Total Enrollment</b>	599	792	799	
<b>Grades Included</b>	8-10	9-10	8-10	
<b>Enrollment in Included Grades</b>	223	156	342	
<b>Sample Size (Treatment)</b>	31	48	54	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	14%	31%	16%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.070</b>	<b>-0.010</b>	<b>-0.439</b> ***	<b>-0.174</b>
<b>Robust Standard Error</b>	(0.160)	(0.107)	(0.120)	0.072

<i>Academic Impacts of LISA Academy Charter School on 11th Grade Literacy EOC, 2011-14</i>				
	2011-12	2012-13	2013-14	
<b>Grades Served</b>	6-12	6-12	6-12	
<b>Total Enrollment</b>	599	792	799	
<b>Grades Included</b>	11	11	11	
<b>Enrollment in 11th Grade</b>	46	39	47	
<b>Sample Size (Treatment)</b>	30	34	36	
<b>Sample Size (% of 11th Grade Enrollment)</b>	65%	87%	77%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.103</b>	<b>+0.384</b> **	<b>-0.054</b>	<b>+0.123</b>
<b>Robust Standard Error</b>	(0.140)	(0.169)	(0.147)	0.087

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Baseline Equivalencies—Math Benchmarks

### *Baseline Equivalency for LISA Academy in Math, 2011-12*

	Charter	Comparison	Difference	P-Value
<b>Number of Observations</b>	259	259	-	
<b>Range of Grades Served</b>	6-12	6-12	-	
<b>Range of Grades in Analysis</b>	6-8	6-8	-	
<b>Average Grade</b>	7.00	7.00	-	1.000
<b>Prior Year Math Z-Score</b>	0.32	0.32	(0.00)	0.983
<b>Prior Year Literacy Z-Score</b>	0.42	0.35	0.07	0.379
<b>% FRL</b>	0.32	0.34	(0.02)	0.640
<b>% Minority</b>	0.64	0.63	0.01	0.855
<b>% Female</b>	0.51	0.50	0.00	0.930

### *Baseline Equivalency for LISA Academy in Math, 2012-13*

	Charter	Comparison	Difference	P-Value
<b>Number of Observations</b>	372	372	-	
<b>Range of Grades Served</b>	6-12	6-12	-	
<b>Range of Grades in Analysis</b>	6-8	6-8	-	
<b>Average Grade</b>	6.91	6.91	-	1.000
<b>Prior Year Math Z-Score</b>	0.19	0.19	(0.00)	0.995
<b>Prior Year Literacy Z-Score</b>	0.25	0.25	0.01	0.931
<b>% FRL</b>	0.42	0.41	0.01	0.823
<b>% Minority</b>	0.67	0.66	0.01	0.876
<b>% Female</b>	0.52	0.52	(0.01)	0.883

### *Baseline Equivalency for LISA Academy in Math, 2013-14*

	Charter	Comparison	Difference	P-Value
<b>Number of Observations</b>	358	358	-	
<b>Range of Grades Served</b>	6-12	6-12	-	
<b>Range of Grades in Analysis</b>	6-8	6-8	-	
<b>Average Grade</b>	7.04	7.04	-	1.000
<b>Prior Year Math Z-Score</b>	0.24	0.24	(0.00)	0.999
<b>Prior Year Literacy Z-Score</b>	0.25	0.27	(0.02)	0.782
<b>% FRL</b>	0.41	0.39	0.02	0.542
<b>% Minority</b>	0.67	0.64	0.03	0.387
<b>% Female</b>	0.55	0.58	(0.03)	0.407

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Literacy EOC**

***Baseline Equivalency for LISA Academy in Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	272	272	-	
<b>Range of Grades Served</b>	6-12	6-12	-	
<b>Range of Grades in Analysis</b>	6-8	6-8	-	
<b>Average Grade</b>	7.00	7.00	-	1.000
<b>Prior Year Math Z-Score</b>	0.40	0.32	0.08	0.354
<b>Prior Year Literacy Z-Score</b>	0.48	0.48	(0.01)	0.949
<b>% FRL</b>	0.31	0.42	(0.11)	*** 0.006
<b>% Minority</b>	0.67	0.63	0.04	0.323
<b>% Female</b>	0.50	0.56	(0.05)	0.229

***Baseline Equivalency for LISA Academy in Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	373	373	-	
<b>Range of Grades Served</b>	6-12	6-12	-	
<b>Range of Grades in Analysis</b>	6-8	6-8	-	
<b>Average Grade</b>	6.92	6.92	-	1.000
<b>Prior Year Math Z-Score</b>	0.31	0.22	0.10	0.220
<b>Prior Year Literacy Z-Score</b>	0.35	0.35	(0.00)	0.946
<b>% FRL</b>	0.39	0.45	(0.06)	* 0.075
<b>% Minority</b>	0.69	0.64	0.05	0.120
<b>% Female</b>	0.51	0.53	(0.02)	0.558

***Baseline Equivalency for LISA Academy in Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	364	364	-	
<b>Range of Grades Served</b>	6-12	6-12	-	
<b>Range of Grades in Analysis</b>	6-8	6-8	-	
<b>Average Grade</b>	7.10	7.10	-	1.000
<b>Prior Year Math Z-Score</b>	0.38	0.38	0.01	0.923
<b>Prior Year Literacy Z-Score</b>	0.40	0.41	(0.00)	0.964
<b>% FRL</b>	0.38	0.44	(0.06)	* 0.097
<b>% Minority</b>	0.70	0.68	0.02	0.471
<b>% Female</b>	0.57	0.54	0.02	0.551

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Baseline Equivalencies—Geometry EOC

### *Baseline Equivalency for LISA Academy in Geometry, 2011-12*

	Charter	Comparison	Difference	P-Value
<b>Number of Observations</b>	31	31	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	8-10	8-10	-	1.00
<b>Average Grade</b>	8.35	8.35	-	1.000
<b>Baseline Algebra Score</b>	0.06	0.07	(0.01)	0.949
<b>% FRL</b>	0.26	0.65	(0.39)	*** 0.002
<b>% Minority</b>	0.68	0.87	(0.19)	* 0.068
<b>% Female</b>	0.65	0.55	0.10	0.437

### *Baseline Equivalency for LISA Academy in Geometry, 2012-13*

	Charter	Comparison	Difference	P-Value
<b>Number of Observations</b>	48	48	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	9-10	9-10	-	
<b>Average Grade</b>	9.27	9.27	-	
<b>Baseline Algebra Score</b>	-0.22	-0.22	(0.00)	0.977
<b>% FRL</b>	0.46	0.67	(0.21)	** 0.040
<b>% Minority</b>	0.40	0.23	0.17	* 0.078
<b>% Female</b>	0.50	0.58	(0.08)	0.413

### *Baseline Equivalency for LISA Academy in Geometry, 2013-14*

	Charter	Comparison	Difference	P-Value
<b>Number of Observations</b>	54	54	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	8-10	8-10	-	
<b>Average Grade</b>	8.91	8.91	-	1.000
<b>Baseline Algebra Score</b>	0.34	0.35	(0.01)	0.956
<b>% FRL</b>	0.41	0.39	0.02	0.844
<b>% Minority</b>	0.78	0.67	0.11	0.197
<b>% Female</b>	0.52	0.48	0.04	0.700

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Baseline Equivalencies—Literacy EOC

<b>Baseline Equivalency for LISA Academy in 11th Grade Literacy, 2011-12</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	30	30	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.09	0.09	(0.00)	0.999
<b>% FRL</b>	0.50	0.43	0.07	0.605
<b>% Minority</b>	0.73	0.77	(0.03)	0.766
<b>% Female</b>	0.47	0.53	(0.07)	0.606

<b>Baseline Equivalency for LISA Academy in 11th Grade Literacy, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	34	34	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.73	0.73	(0.00)	0.985
<b>% FRL</b>	0.24	0.24	-	1.000
<b>% Minority</b>	0.32	0.41	(0.09)	0.451
<b>% Female</b>	0.56	0.65	(0.09)	0.457

<b>Baseline Equivalency for LISA Academy in 11th Grade Literacy, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	36	36	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.22	0.22	0.00	0.999
<b>% FRL</b>	0.50	0.42	0.08	0.478
<b>% Minority</b>	0.72	0.61	0.11	0.317
<b>% Female</b>	0.53	0.56	(0.03)	0.813

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

# LISA ACADEMY NORTH

## OVERALL EFFECT

**+0.038\***

*Significant at the 10% level*

### MATHEMATICS Avg. Annual Effect (Grades 4-10)

ELEMENTARY: +0.099\*\*\*  
SECONDARY: -0.058  
OVERALL: +0.078\*\*

North Little Rock, AR  
Open-Enrollment  
Grades Served: K-11  
(2011-12); K-12 since  
2012-13  
Year Opened: 2008

### LITERACY Avg. Annual Effect (Grades 4-11)

ELEMENTARY: -0.011  
SECONDARY: +0.185  
OVERALL: -0.010

### Elementary Effects (Benchmark Exams)

Year	#Charter Students	Benchmark Effect- Math	#Charter Students	Benchmark Effect- Literacy
11-12	136	+0.125 *	148	+0.105 *
12-13	174	+0.169 ***	178	-0.012
13-14	240	+0.019	203	-0.099 *

**Avg. Annual Effect**

**+0.099 \*\*\***

**-0.011**

### Secondary Effects (EOC Exams)

Year	#Charter Students	EOC Effect- Math	#Charter Students	EOC Effect- Literacy
11-12	22	-0.121	-	-
12-13	19	-0.279 *	-	-
13-14	20	+0.560 ***	16	+0.185

**Avg. Annual Effect**

**-0.058**

**+0.185**

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Elementary Effects

### *Academic Impacts of LISA Academy North on Math Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	K-11	K-12	K-12	
<b>Total Enrollment</b>	450	500	593	
<b>Grades Included</b>	4-8	4-8	4-8	
<b>Enrollment in Included Grades</b>	196	226	303	
<b>Sample Size (Treatment)</b>	136	174	240	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	69%	77%	79%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.125</b> *	<b>+0.169</b> ***	<b>+0.019</b>	<b>+0.099</b> ***
<b>Robust Standard Error</b>	(0.067)	(0.056)	(0.053)	(0.033)

### *Academic Impacts of LISA Academy North on Literacy Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	K-11	K-12	K-12	
<b>Total Enrollment</b>	450	500	593	
<b>Grades Included</b>	4-8	4-8	4-8	
<b>Enrollment in Included Grades</b>	196	226	303	
<b>Sample Size (Treatment)</b>	148	178	203	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	76%	79%	67%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>0.105</b> *	<b>-0.0117</b>	<b>-0.0991</b> *	<b>-0.011</b>
<b>Robust Standard Error</b>	(0.064)	(0.063)	(0.055)	(0.035)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

Secondary Effects

**Academic Impacts of LISA Academy North on Geometry EOC, 2011-14**

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	K-11	K-12	K-12	
<b>Total Enrollment</b>	450	500	593	
<b>Grades Included</b>	8, 10	8-10	8, 10	
<b>Enrollment in Included Grades</b>	73	125	83	
<b>Sample Size (Treatment)</b>	22	19	20	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	30%	15%	24%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.121</b>	<b>-0.279 *</b>	<b>0.560 ***</b>	<b>-0.058</b>
<b>Robust Standard Error</b>	(0.125)	(0.140)	(0.201)	(0.085)

**Academic Impacts of LISA Academy North on 11th Grade Literacy EOC, 2011-14**

	2013-14	
<b>Grades Served</b>	K-12	
<b>Total Enrollment</b>	593	
<b>Grades Included</b>	11	
<b>Enrollment in 11th Grade</b>	19	
<b>Sample Size (Treatment)</b>	16	
<b>Sample Size (% of 11th Grade Enrollment)</b>	84%	<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>0.185</b>	+0.185
<b>Robust Standard Error</b>	(0.358)	(0.358)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math Benchmarks**

<b>Baseline Equivalency for LISA Academy North in Math, 2011-12</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	136	136	-	
<b>Range of Grades Served</b>	K-11	K-11	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.32	6.32	-	1.000
<b>Prior Year Math Z-Score</b>	0.01	0.01	-	1.000
<b>Prior Year Literacy Z-Score</b>	0.02	0.12	(0.10)	0.292
<b>% FRL</b>	0.34	0.32	0.01	0.797
<b>% Minority</b>	0.42	0.42	-	1.000
<b>% Female</b>	0.50	0.50	-	1.000

<b>Baseline Equivalency for LISA Academy North in Math, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	174	174	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.00	6.00	-	1.000
<b>Prior Year Math Z-Score</b>	0.03	0.03	(0.00)	0.998
<b>Prior Year Literacy Z-Score</b>	0.07	0.11	(0.04)	0.706
<b>% FRL</b>	0.40	0.39	0.01	0.913
<b>% Minority</b>	0.44	0.44	-	1.000
<b>% Female</b>	0.52	0.50	0.02	0.748

<b>Baseline Equivalency for LISA Academy North in Math, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	240	240	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	5.85	5.85	-	1.000
<b>Prior Year Math Z-Score</b>	0.16	0.16	(0.00)	1.000
<b>Prior Year Literacy Z-Score</b>	0.11	0.21	(0.10)	0.213
<b>% FRL</b>	0.37	0.35	0.01	0.775
<b>% Minority</b>	0.48	0.51	(0.03)	0.465
<b>% Female</b>	0.49	0.47	0.02	0.648

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

<b><i>Baseline Equivalency for LISA Academy North in Literacy, 2011-12</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	148	148	-	
<b>Range of Grades Served</b>	K-11	K-11	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	6.32	6.32	-	1.000
<b>Prior Year Math Z-Score</b>	0.06	-0.03	0.09	0.386
<b>Prior Year Literacy Z-Score</b>	0.01	0.01	(0.00)	0.986
<b>% FRL</b>	0.30	0.35	(0.05)	0.386
<b>% Minority</b>	0.46	0.41	0.05	0.412
<b>% Female</b>	0.49	0.47	0.01	0.816

<b><i>Baseline Equivalency for LISA Academy North in Literacy, 2012-13</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	178	178	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	1.46	1.46	-	1.000
<b>Prior Year Math Z-Score</b>	0.00	-0.02	0.02	0.852
<b>Prior Year Literacy Z-Score</b>	0.08	0.08	(0.00)	0.980
<b>% FRL</b>	0.40	0.42	(0.02)	0.666
<b>% Minority</b>	0.45	0.44	0.01	0.915
<b>% Female</b>	0.53	0.50	0.03	0.596

<b><i>Baseline Equivalency for LISA Academy North in Literacy, 2013-14</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	203	203	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	5.87	5.87	-	1.000
<b>Prior Year Math Z-Score</b>	0.17	0.14	0.03	0.743
<b>Prior Year Literacy Z-Score</b>	0.23	0.23	(0.00)	0.996
<b>% FRL</b>	0.35	0.36	(0.01)	0.836
<b>% Minority</b>	0.50	0.41	0.09 *	0.058
<b>% Female</b>	0.50	0.53	(0.02)	0.620

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Baseline Equivalencies—Geometry EOC

<b>Baseline Equivalency for LISA Academy North in Geometry, 2011-12</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	22	22	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	8, 10	8, 10	-	
<b>Average Grade</b>	9.18	9.18	-	1.000
<b>Baseline Algebra Score</b>	0.00	0.00	-	1.000
<b>% FRL</b>	0.36	0.32	0.05	0.750
<b>% Minority</b>	0.41	0.41	-	1.000
<b>% Female</b>	0.41	0.36	0.05	0.757

<b>Baseline Equivalency for LISA Academy North in Geometry, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	19	19	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	8-10	8-10	-	
<b>Average Grade</b>	9.11	9.11	-	1.000
<b>Baseline Algebra Score</b>	0.22	0.23	(0.00)	0.987
<b>% FRL</b>	0.26	0.42	(0.16)	0.305
<b>% Minority</b>	0.47	0.37	0.11	0.511
<b>% Female</b>	0.47	0.68	(0.21)	0.189

<b>Baseline Equivalency for LISA Academy North in Geometry, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	20	20	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	8, 10	8, 10	-	
<b>Average Grade</b>	9.30	9.30	-	1.000
<b>Baseline Algebra Score</b>	-0.09	-0.09	(0.01)	0.980
<b>% FRL</b>	0.45	0.45	-	1.000
<b>% Minority</b>	0.60	0.40	0.20	0.206
<b>% Female</b>	0.55	0.50	0.05	0.752

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalency—Literacy EOC**

<i>Baseline Equivalency for LISA Academy North in 11th Grade Literacy, 2013-14</i>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	16	16	-	
<b>Range of Grades Served</b>	K-12	K-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.32	0.32	0.00	0.999
<b>% FRL</b>	0.25	0.31	(0.06)	0.694
<b>% Minority</b>	0.19	0.31	(0.13)	0.414
<b>% Female</b>	0.63	0.81	(0.19)	0.238

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# LITTLE ROCK PREP

## OVERALL EFFECT

**+0.021**

*Not statistically significant*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 4-8)

ELEMENTARY: +0.031  
SECONDARY: N/A  
OVERALL: +0.031

Little Rock, AR  
Open-Enrollment  
Grades Served: K-7  
(2011-12); K-8 since  
2012-13  
Year Opened: 2009

**LITERACY**  
Avg. Annual Effect  
(Grades 4-8)

ELEMENTARY: +0.010  
SECONDARY: N/A  
OVERALL: +0.010

Elementary Effects (Benchmark Exams)				
Year	#Charter Students	Benchmark Effect- Math	#Charter Students	Benchmark Effect- Literacy
11-12	77	+0.037	78	+0.014
12-13	120	+0.142 **	119	+0.050
13-14	141	-0.056	139	-0.019
<b>Avg. Annual Effect</b>		<b>+0.031</b>		<b>+0.010</b>

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Elementary Effects

### *Academic Impacts of Little Rock Prep on Math Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	K-7	K-8	K-8	
<b>Total Enrollment</b>	270	391	417	
<b>Grades Included</b>	4-7	4-8	4-8	
<b>Enrollment in Included Grades</b>	140	171	195	
<b>Sample Size (Treatment)</b>	77	120	141	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	55%	70%	72%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.037</b>	<b>+0.142</b> **	<b>-0.055</b>	<b>+0.031</b>
<b>Robust Standard Error</b>	(0.083)	(0.068)	(0.059)	(0.039)

### *Academic Impacts of Little Rock Prep on Literacy Benchmarks, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	K-7	K-8	K-8	
<b>Total Enrollment</b>	270	391	417	
<b>Grades Included</b>	4-7	4-8	4-8	
<b>Enrollment in Included Grades</b>	140	171	195	
<b>Sample Size (Treatment)</b>	78	119	139	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	56%	70%	71%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.014</b>	<b>+0.050</b>	<b>-0.019</b>	<b>+0.010</b>
<b>Robust Standard Error</b>	(0.108)	(0.076)	(0.063)	(0.044)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math Benchmarks**

<b>Baseline Equivalency for Little Rock Prep in Math, 2011-12</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	77	77	-	
<b>Range of Grades Served</b>	K-7	K-7	-	
<b>Range of Grades in Analysis</b>	4-7	4-7	-	
<b>Average Grade</b>	5.86	5.86	-	1.000
<b>Prior Year Math Z-Score</b>	-0.76	-0.76	(0.00)	0.994
<b>Prior Year Literacy Z-Score</b>	-0.72	-0.78	0.06	0.703
<b>% FRL</b>	0.81	0.88	(0.08)	0.183
<b>% Minority</b>	0.99	0.96	0.03	0.311
<b>% Female</b>	0.43	0.47	(0.04)	0.627

<b>Baseline Equivalency for Little Rock Prep in Math, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	120	120	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	5.78	5.78	-	1.000
<b>Prior Year Math Z-Score</b>	-0.90	-0.89	(0.01)	0.926
<b>Prior Year Literacy Z-Score</b>	-0.70	-0.77	0.07	0.597
<b>% FRL</b>	0.82	0.84	(0.03)	0.607
<b>% Minority</b>	1.00	0.93	0.07	*** 0.004
<b>% Female</b>	0.48	0.44	0.04	0.517

<b>Baseline Equivalency for Little Rock Prep in Math, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	141	141	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	5.39	5.39	-	1.000
<b>Prior Year Math Z-Score</b>	-0.76	-0.76	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.65	-0.55	(0.10)	0.393
<b>% FRL</b>	0.86	0.81	0.05	0.263
<b>% Minority</b>	1.00	1.00	-	1.000
<b>% Female</b>	0.48	0.45	0.04	0.551

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Literacy Benchmarks**

***Baseline Equivalency for Little Rock Prep in Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	78	78	-	
<b>Range of Grades Served</b>	K-7	K-7	-	
<b>Range of Grades in Analysis</b>	4-7	4-7	-	
<b>Average Grade</b>	5.83	5.83	-	1.000
<b>Prior Year Math Z-Score</b>	-0.79	-0.71	(0.08)	0.584
<b>Prior Year Literacy Z-Score</b>	-0.74	-0.73	(0.01)	0.966
<b>% FRL</b>	0.81	0.87	(0.06)	0.275
<b>% Minority</b>	0.99	0.86	0.13	*** 0.003
<b>% Female</b>	0.44	0.42	0.01	0.872

***Baseline Equivalency for Little Rock Prep in Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	119	119	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	5.77	5.77	-	1.000
<b>Prior Year Math Z-Score</b>	-0.89	-0.71	(0.17)	0.159
<b>Prior Year Literacy Z-Score</b>	-0.67	-0.64	(0.03)	0.843
<b>% FRL</b>	0.81	0.77	0.03	0.524
<b>% Minority</b>	1.00	0.82	0.18	*** <0.001
<b>% Female</b>	0.49	0.42	0.07	0.298

***Baseline Equivalency for Little Rock Prep in Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	139	139	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	5.34	5.34	-	1.000
<b>Prior Year Math Z-Score</b>	-0.70	-0.67	(0.02)	0.818
<b>Prior Year Literacy Z-Score</b>	-0.57	-0.57	(0.00)	0.989
<b>% FRL</b>	0.86	0.87	(0.01)	0.860
<b>% Minority</b>	1.00	0.96	0.04	** 0.024
<b>% Female</b>	0.50	0.42	0.09	0.149

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

# Mountain Home High School Career Academy

## OVERALL EFFECT

**-0.216\*\*\***

*Significant at the 1% level*

<b>MATHEMATICS</b> Avg. Annual Effect (Grades 9-10)	Mountain Home, AR District Conversion Grades Served: 9-12 Year Opened: 2003	<b>LITERACY</b> Avg. Annual Effect (Grade 11)
ELEMENTARY: N/A SECONDARY: -0.494*** OVERALL: -0.494***		ELEMENTARY: N/A SECONDARY: -0.103*** OVERALL: -0.103***

Secondary Effects (EOC Exams)						
Year	#Charter Students	EOC Effect-Math		#Charter Students	EOC Effect-Literacy	
<b>11-12</b>	103	-0.331	***	141	-0.140	**
<b>12-13</b>	50	-0.336	***	143	-0.001	
<b>13-14</b>	66	-0.354	***	122	-0.186	**
<b>Avg. Annual Effect</b>		<b>-0.494</b>	<b>***</b>		<b>-0.103</b>	<b>***</b>

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Secondary Effects

### *Academic Impacts of Mountain Home H.S. Career Academy on Geometry EOC, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	9-12	9-12	9-12	
<b>Total Enrollment</b>	1,210	1,211	1,186	
<b>Grades Included</b>	9-10	9-10	9-10	
<b>Enrollment in Included Grades</b>	629	640	631	
<b>Sample Size (Treatment)</b>	103	50	66	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	16%	8%	10%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.331 ***</b>	<b>-0.336 ***</b>	<b>-0.354 ***</b>	<b>-0.494 ***</b>
<b>Robust Standard Error</b>	(0.078)	(0.099)	(0.091)	0.061

### *Academic Impacts of Mountain Home H.S. Career Academy on 11th Grade Literacy EOC, 2011-14*

	2011-12	2012-13	2013-14	
<b>Grades Served</b>	9-12	9-12	9-12	
<b>Total Enrollment</b>	1,210	1,211	1,186	
<b>Grades Included</b>	11	11	11	
<b>Enrollment in 11th Grade</b>	283	285	269	
<b>Sample Size (Treatment)</b>	141	143	122	
<b>Sample Size (% of 11th Grade Enrollment)</b>	50%	50%	45%	
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.140 **</b>	<b>-0.00135</b>	<b>-0.186 **</b>	<b>-0.103 ***</b>
<b>Robust Standard Error</b>	(0.066)	(0.065)	(0.074)	0.039

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Geometry EOCs**

***Baseline Equivalency for Mountain Home High School Career Academy in Geometry, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	103	103	-	
<b>Range of Grades Served</b>	9-12	9-12	-	
<b>Range of Grades in Analysis</b>	9-10	9-10	-	
<b>Average Grade</b>	9.63	9.63	-	1.000
<b>Baseline Algebra Score</b>	0.20	0.21	(0.00)	0.987
<b>% FRL</b>	0.65	0.74	(0.09)	0.174
<b>% Minority</b>	0.09	0.06	0.03	0.421
<b>% Female</b>	0.37	0.50	(0.14)	** 0.049

***Baseline Equivalency for Mountain Home High School Career Academy in Geometry, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	50	50	-	
<b>Range of Grades Served</b>	9-12	9-12	-	
<b>Range of Grades in Analysis</b>	9-10	9-10	-	
<b>Average Grade</b>	9.98	9.98	-	1.000
<b>Baseline Algebra Score</b>	0.07	0.07	-	1.000
<b>% FRL</b>	0.54	0.78	(0.24)	** 0.011
<b>% Minority</b>	0.04	0.04	-	1.000
<b>% Female</b>	0.50	0.42	0.08	0.422

***Baseline Equivalency for Mountain Home High School Career Academy in Geometry, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	66	66	-	
<b>Range of Grades Served</b>	9-12	9-12	-	
<b>Range of Grades in Analysis</b>	9-10	9-10	-	
<b>Average Grade</b>	9.88	9.88	-	1.000
<b>Baseline Algebra Score</b>	0.00	0.00	(0.00)	0.998
<b>% FRL</b>	0.73	0.67	0.06	0.449
<b>% Minority</b>	0.03	0.00	0.03	0.154
<b>% Female</b>	0.48	0.47	0.02	0.862

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy EOCs**

***Baseline Equivalency for Mountain Home H.S. Career Academy in 11th Grade Literacy, 2011-12***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	141	141	-	
<b>Range of Grades Served</b>	9-12	9-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.49	0.50	(0.00)	0.948
<b>% FRL</b>	0.57	0.66	(0.09)	0.112
<b>% Minority</b>	0.05	0.12	(0.07)	** 0.033
<b>% Female</b>	0.57	0.52	0.05	0.403

***Baseline Equivalency for Mountain Home H.S. Career Academy in 11th Grade Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	143	143	-	
<b>Range of Grades Served</b>	9-12	9-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.45	0.45	(0.00)	0.969
<b>% FRL</b>	0.61	0.69	(0.08)	0.174
<b>% Minority</b>	0.06	0.08	(0.03)	0.354
<b>% Female</b>	0.53	0.45	0.08	0.193

***Baseline Equivalency for Mountain Home H.S. Career Academy in 11th Grade Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	122	122	-	
<b>Range of Grades Served</b>	9-12	9-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	0.41	0.41	(0.01)	0.953
<b>% FRL</b>	0.61	0.71	(0.11)	* 0.079
<b>% Minority</b>	0.05	0.11	(0.07)	* 0.062
<b>% Female</b>	0.58	0.53	0.05	0.439

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

# NORTHWEST ARKANSAS CLASSICAL ACADEMY

**OVERALL EFFECT**

**-0.041** *Not statistically significant*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 4-8)

ELEMENTARY: -0.072  
SECONDARY: N/A  
OVERALL: -0.072

Bentonville, AR  
Open-Enrollment  
Grades Served: K-8  
Year Opened: 2013

**LITERACY**  
Avg. Annual Effect  
(Grades 4-8)

ELEMENTARY: -0.022  
SECONDARY: N/A  
OVERALL: -0.022

Elementary Effects (Benchmark Exams)				
Year	#Charter Students	Benchmark Effect- Math	#Charter Students	Benchmark Effect- Literacy
11-12	-	-	-	-
12-13	-	-	-	-
13-14	145	-0.072	138	-0.022
<b>Avg. Annual Effect</b>		<b>-0.072</b>		<b>-0.022</b>

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level  
No asterisks means the effect is not statistically significant.  
Effect sizes expressed as a percentage of one standard deviation in the test score distribution.  
Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Elementary Effects

### *Academic Impacts of Northwest Arkansas Classical Academy on Math Benchmarks, 2013-14*

<b>2013-14</b>		
<b>Grades Served</b>	K-8	
<b>Total Enrollment</b>	400	
<b>Grades Included</b>	4-8	
<b>Enrollment in Included Grades</b>	208	
<b>Sample Size (Treatment)</b>	145	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	70%	
		<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.072</b>	<b>-0.072</b>
<b>Robust Standard Error</b>	(0.081)	<b>(0.081)</b>

### *Academic Impacts of Northwest Arkansas Classical Academy on Literacy Benchmarks, 2013-14*

<b>2013-14</b>		
<b>Grades Served</b>	K-8	
<b>Total Enrollment</b>	400	
<b>Grades Included</b>	4-8	
<b>Enrollment in Included Grades</b>	208	
<b>Sample Size (Treatment)</b>	138	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	66%	
		<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.022</b>	<b>-0.022</b>
<b>Robust Standard Error</b>	(0.063)	<b>(0.063)</b>

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Benchmark Exams**

***Baseline Equivalency for Northwest Arkansas Classical Academy in Math, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	145	145	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	5.72	5.72	-	1.000
<b>Prior Year Math Z-Score</b>	0.56	0.56	0.00	0.999
<b>Prior Year Literacy Z-Score</b>	0.59	0.62	(0.03)	0.661
<b>% FRL</b>	0.19	0.18	0.01	0.879
<b>% Minority</b>	0.33	0.31	0.02	0.706
<b>% Female</b>	0.53	0.52	0.01	0.906

***Baseline Equivalency for Northwest Arkansas Classical Academy in Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	138	138	-	
<b>Range of Grades Served</b>	K-8	K-8	-	
<b>Range of Grades in Analysis</b>	4-8	4-8	-	
<b>Average Grade</b>	5.79	5.79	-	
<b>Prior Year Math Z-Score</b>	0.67	0.63	0.04	0.688
<b>Prior Year Literacy Z-Score</b>	0.70	0.70	(0.00)	0.991
<b>% FRL</b>	0.17	0.19	(0.01)	0.755
<b>% Minority</b>	0.30	0.26	0.04	0.422
<b>% Female</b>	0.54	0.55	(0.01)	0.809

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# OAK GROVE ELEM. HEALTH, WELLNESS, AND ENVIRONMENTAL SCIENCE

## OVERALL EFFECT

**+0.066**

*Not statistically significant*

<b>MATHEMATICS</b> Avg. Annual Effect (Grade 4)
ELEMENTARY: +0.220*** SECONDARY: N/A OVERALL: +0.220***

Paragould, AR
District Conversion
Grades Served: K-4
Year Opened: 2009
Year Closed: 2013

<b>LITERACY</b> Avg. Annual Effect (Grade 4)
ELEMENTARY: -0.115 SECONDARY: N/A OVERALL: -0.115

Elementary Effects (Benchmark Exams)				
Year	#Charter Students	Benchmark Effect- Math	#Charter Students	Benchmark Effect- Literacy
11-12	64	+0.023	70	-0.315 **
12-13	61	+0.511 ***	73	-0.0002
13-14	-	-	-	-
<b>Avg. Annual Effect</b>		<b>+0.220 ***</b>		<b>-0.115</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

### *Academic Impacts of Oak Grove on Math Benchmarks, 2011-13*

	2011-12	2012-13		
<b>Grades Served</b>	K-4	K-4		
<b>Total Enrollment</b>	458	415		
<b>Grades Included</b>	4	4		
<b>Enrollment in Included Grades</b>	98	98		
<b>Sample Size (Treatment)</b>	64	61		
<b>Sample Size (% of Inc. Grade Enrollment)</b>	65%	62%		
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.023</b>	<b>+0.511</b>	<b>***</b>	<b>+0.220 ***</b>
<b>Robust Standard Errors</b>	(0.089)	(0.108)		<b>(0.069)</b>

### *Academic Impacts of Oak Grove on Literacy Benchmarks, 2011-13*

	2011-12	2012-13		
<b>Grades Served</b>	K-4	K-4		
<b>Total Enrollment</b>	458	415		
<b>Grades Included</b>	4	4		
<b>Enrollment in Included Grades</b>	98	98		
<b>Sample Size (Treatment)</b>	70	73		
<b>Sample Size (% of Inc. Grade Enrollment)</b>	71%	74%		
				<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>-0.315</b>	<b>**</b>	<b>-0.0002</b>	<b>-0.115</b>
<b>Robust Standard Errors</b>	(0.123)		(0.09)	<b>(0.074)</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math Benchmarks**

<i>Baseline Equivalency for Oak Grove in Math, 2011-12</i>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	64	64	-	
<b>Range of Grades Served</b>	K-4	K-4	-	
<b>Range of Grades in Analysis</b>	4	4	-	
<b>Average Grade</b>	4.00	4.00	-	1.000
<b>Prior Year Math Z-Score</b>	-0.03	-0.02	(0.01)	0.951
<b>Prior Year Literacy Z-Score</b>	-0.24	-0.14	(0.10)	0.570
<b>% FRL</b>	0.80	0.66	0.14 *	0.074
<b>% Minority</b>	0.06	0.13	(0.06)	0.225
<b>% Female</b>	0.53	0.52	0.02	0.860

<i>Baseline Equivalency for Oak Grove in Math, 2012-13</i>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	61	61	-	
<b>Range of Grades Served</b>	K-4	K-4	-	
<b>Range of Grades in Analysis</b>	4	4	-	
<b>Average Grade</b>	4.00	4.00	-	1.000
<b>Prior Year Math Z-Score</b>	0.01	0.02	(0.01)	1.000
<b>Prior Year Literacy Z-Score</b>	-0.22	-0.37	0.15	0.387
<b>% FRL</b>	0.67	0.70	(0.03)	0.696
<b>% Minority</b>	0.08	0.13	(0.05)	0.379
<b>% Female</b>	0.48	0.59	(0.11)	0.204

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

<b>Baseline Equivalency for Oak Grove in Literacy, 2011-12</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	70	70	-	
<b>Range of Grades Served</b>	K-4	K-4	-	
<b>Range of Grades in Analysis</b>	4	4	-	
<b>Average Grade</b>	4.00	4.00	-	1.000
<b>Prior Year Math Z-Score</b>	-0.03	-0.26	0.23	0.139
<b>Prior Year Literacy Z-Score</b>	-0.18	-0.17	(0.01)	0.956
<b>% FRL</b>	0.73	0.67	0.06	0.461
<b>% Minority</b>	0.07	0.13	(0.06)	0.260
<b>% Female</b>	0.59	0.53	0.06	0.496

<b>Baseline Equivalency for Oak Grove in Literacy, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	73	73	-	
<b>Range of Grades Served</b>	K-4	K-4	-	
<b>Range of Grades in Analysis</b>	4	4	-	
<b>Average Grade</b>	4.00	4.00	-	1.000
<b>Prior Year Math Z-Score</b>	-0.09	0.05	(0.15)	0.364
<b>Prior Year Literacy Z-Score</b>	-0.37	-0.36	(0.01)	0.954
<b>% FRL</b>	0.67	0.70	(0.03)	0.722
<b>% Minority</b>	0.10	0.07	0.03	0.547
<b>% Female</b>	0.52	0.55	(0.03)	0.740

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# OSCEOLA STEM ACADEMY

## OVERALL EFFECT

**+0.057**

*Not statistically significant*

### MATHEMATICS Avg. Annual Effect (Grades 5-8)

ELEMENTARY: +0.096\*\*  
SECONDARY: N/A  
OVERALL: +0.096\*\*

Osceola, AR  
District Conversion  
Grades Served: 5-8  
Year Opened: 2012

### LITERACY Avg. Annual Effect (Grades 5-8)

ELEMENTARY: -0.007  
SECONDARY: N/A  
OVERALL: -0.007

Elementary Effects (Benchmark Exams)					
Year	#Charter Students	Benchmark Effect- Math		#Charter Students	Benchmark Effect- Literacy
11-12	-	-		-	-
12-13	149	+0.127	*	86	+0.023
13-14	135	+0.078		93	-0.034
<b>Avg. Annual Effect</b>		<b>+0.096</b>	<b>**</b>		<b>-0.007</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

## Elementary Effects

<b>Academic Impacts of Osceola STEM Academy on Math Benchmarks, 2012-14</b>			
	<b>2012-13</b>	<b>2013-14</b>	
<b>Grades Served</b>	5-8	5-8	
<b>Total Enrollment</b>	366	383	
<b>Grades Included</b>	5-8	5-8	
<b>Enrollment in Included Grades</b>	366	383	
<b>Sample Size (Treatment)</b>	149	135	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	41%	35%	
			<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>0.127 *</b>	<b>+0.078</b>	<b>+0.096 **</b>
<b>Robust Standard Errors</b>	(0.077)	(0.059)	<b>(0.047)</b>

<b>Academic Impacts of Osceola STEM Academy on Literacy Benchmarks, 2012-14</b>			
	<b>2012-13</b>	<b>2013-14</b>	
<b>Grades Served</b>	5-8	5-8	
<b>Total Enrollment</b>	366	383	
<b>Grades Included</b>	5-8	5-8	
<b>Enrollment in Included Grades</b>	366	383	
<b>Sample Size (Treatment)</b>	86	93	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	23%	24%	
			<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.023</b>	<b>-0.034</b>	<b>-0.007</b>
<b>Robust Standard Errors</b>	(0.089)	(0.082)	<b>(0.060)</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Math Benchmarks**

***Baseline Equivalency for Osceola STEM Academy in Math, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	149	149	-	
<b>Range of Grades Served</b>	5-8	5-8	-	
<b>Range of Grades in Analysis</b>	5-8	5-8	-	
<b>Average Grade</b>	6.54	6.54	-	1.000
<b>Prior Year Math Z-Score</b>	-0.42	-0.40	(0.01)	0.883
<b>Prior Year Literacy Z-Score</b>	-0.18	0.31	(0.48)	0.132
<b>% FRL</b>	0.99	0.84	0.15	*** <0.001
<b>% Minority</b>	0.74	0.53	0.21	*** <0.001
<b>% Female</b>	0.56	0.52	0.05	0.416

***Baseline Equivalency for Osceola STEM Academy in Math, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	135	135	-	
<b>Range of Grades Served</b>	5-8	5-8	-	
<b>Range of Grades in Analysis</b>	5-8	5-8	-	
<b>Average Grade</b>	6.50	6.50	-	1.000
<b>Prior Year Math Z-Score</b>	-0.48	-0.48	(0.00)	0.983
<b>Prior Year Literacy Z-Score</b>	-0.23	-0.38	0.14	0.139
<b>% FRL</b>	0.98	0.94	0.04	0.124
<b>% Minority</b>	0.68	0.60	0.08	0.163
<b>% Female</b>	0.53	0.47	0.07	0.273

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

***Baseline Equivalency for Osceola STEM Academy in Literacy, 2012-13***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	86	86	-	
<b>Range of Grades Served</b>	5-8	5-8	-	
<b>Range of Grades in Analysis</b>	5-8	5-8	-	
<b>Average Grade</b>	6.59	6.59	-	1.000
<b>Prior Year Math Z-Score</b>	-0.38	-0.23	(0.15)	0.243
<b>Prior Year Literacy Z-Score</b>	-0.17	-0.16	(0.01)	0.925
<b>% FRL</b>	1.00	0.86	0.14 ***	0.000
<b>% Minority</b>	0.76	0.62	0.14 **	0.049
<b>% Female</b>	0.53	0.53	-	1.000

***Baseline Equivalency for Osceola STEM Academy in Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	93	93	-	
<b>Range of Grades Served</b>	5-8	5-8	-	
<b>Range of Grades in Analysis</b>	5-8	5-8	-	
<b>Average Grade</b>	6.59	6.59	-	1.000
<b>Prior Year Math Z-Score</b>	-0.37	-0.15	(0.21)	0.087
<b>Prior Year Literacy Z-Score</b>	-0.01	-0.001	(0.01)	0.956
<b>% FRL</b>	0.98	0.84	0.14 ***	0.001
<b>% Minority</b>	0.75	0.59	0.16 **	0.019
<b>% Female</b>	0.51	0.59	(0.09)	0.239

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# PINE BLUFF LIGHTHOUSE

**OVERALL EFFECT**

**+0.038** *Not statistically significant*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 4-6)

ELEMENTARY: +0.023  
SECONDARY: N/A  
OVERALL: +0.023

Pine Bluff, AR  
Open-Enrollment  
Grades Served: K-4 (2011-12); K-5 (2012-13); K-6 (2013-14)  
Year Opened: 2011

**LITERACY**  
Avg. Annual Effect  
(Grades 4-6)

ELEMENTARY: +0.051  
SECONDARY: N/A  
OVERALL: +0.051

Elementary Effects (Benchmark Exams)					
Year	#Charter Students	Benchmark Effect- Math		#Charter Students	Benchmark Effect- Literacy
11-12	-	-		-	-
12-13	38	+0.353	***	38	+0.206
13-14	65	-0.172	*	57	-0.033
<b>Avg. Annual Effect</b>		<b>+0.023</b>			<b>+0.051</b>

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level  
No asterisks means the effect is not statistically significant.  
Effect sizes expressed as a percentage of one standard deviation in the test score distribution.  
Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Elementary Effects

<b>Academic Impacts of Pine Bluff Lighthouse on Math Benchmarks, 2012-14</b>			
	<b>2012-13</b>	<b>2013-14</b>	
<b>Grades Served</b>	K-5	K-6	
<b>Total Enrollment</b>	243	283	
<b>Grades Included</b>	4-5	4-6	
<b>Enrollment in Included Grades</b>	52	85	
<b>Sample Size (Treatment)</b>	38	65	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	73%	76%	
			<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>0.353</b>	<b>***</b>	<b>-0.172</b> *
<b>Robust Standard Error</b>	(0.127)		(0.098)
			<b>+0.023</b>
			(0.077)

<b>Academic Impacts of Pine Bluff Lighthouse on Literacy Benchmarks, 2012-14</b>			
	<b>2012-13</b>	<b>2013-14</b>	
<b>Grades Served</b>	K-5	K-6	
<b>Total Enrollment</b>	243	283	
<b>Grades Included</b>	4-5	4-6	
<b>Enrollment in Included Grades</b>	52	85	
<b>Sample Size (Treatment)</b>	38	57	
<b>Sample Size (% of Inc. Grade Enrollment)</b>	73%	67%	
			<b>Avg. Effect</b>
<b>OLS Treatment Effect</b>	<b>+0.206</b>	<b>-0.033</b>	<b>+0.051</b>
<b>Robust Standard Error</b>	(0.126)	(0.093)	(0.075)

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies— Math Benchmarks**

<b>Baseline Equivalency for Pine Bluff Lighthouse in Math, 2012-13</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	38	38	-	
<b>Range of Grades Served</b>	K-5	K-5	-	
<b>Range of Grades in Analysis</b>	4-5	4-5	-	
<b>Average Grade</b>	4.55	4.55	-	1.000
<b>Prior Year Math Z-Score</b>	-0.81	-0.81	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.66	-0.84	0.18	0.402
<b>% FRL</b>	0.87	0.92	(0.05)	0.455
<b>% Minority</b>	1.00	1.00	-	1.000
<b>% Female</b>	0.42	0.39	0.03	0.815

<b>Baseline Equivalency for Pine Bluff Lighthouse in Math, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	65	65	-	
<b>Range of Grades Served</b>	K-6	K-6	-	
<b>Range of Grades in Analysis</b>	4-6	4-6	-	
<b>Average Grade</b>	4.86	4.86	-	1.000
<b>Prior Year Math Z-Score</b>	-0.72	-0.72	-	1.000
<b>Prior Year Literacy Z-Score</b>	-0.75	-0.70	(0.04)	0.778
<b>% FRL</b>	0.86	0.89	(0.03)	0.593
<b>% Minority</b>	1.00	1.00	-	1.000
<b>% Female</b>	0.43	0.38	0.05	0.592

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

**Baseline Equivalencies—Literacy Benchmarks**

<b><i>Baseline Equivalency for Pine Bluff Lighthouse in Literacy, 2012-13</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	38	38	-	
<b>Range of Grades Served</b>	K-5	K-5	-	
<b>Range of Grades in Analysis</b>	4-5	4-5	-	
<b>Average Grade</b>	4.53	4.53	-	1.000
<b>Prior Year Math Z-Score</b>	-0.81	-0.71	(0.10)	0.606
<b>Prior Year Literacy Z-Score</b>	-0.59	-0.59	-	1.000
<b>% FRL</b>	0.84	0.89	(0.05)	0.497
<b>% Minority</b>	1.00	1.00	-	1.000
<b>% Female</b>	0.42	0.39	0.03	0.815

<b><i>Baseline Equivalency for Pine Bluff Lighthouse in Literacy, 2013-14</i></b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	57	57	-	
<b>Range of Grades Served</b>	K-6	K-6	-	
<b>Range of Grades in Analysis</b>	4-6	4-6	-	
<b>Average Grade</b>	4.82	4.82	-	1.000
<b>Prior Year Math Z-Score</b>	-0.75	-0.76	0.00	0.993
<b>Prior Year Literacy Z-Score</b>	-0.73	-0.73	(0.00)	0.998
<b>% FRL</b>	0.93	0.95	(0.02)	0.696
<b>% Minority</b>	1.00	0.98	0.02	0.315
<b>% Female</b>	0.44	0.37	0.07	0.445

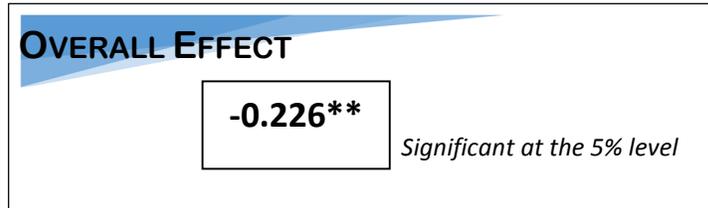
*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# QUEST MIDDLE SCHOOL OF PINE BLUFF



<b>MATHEMATICS</b> Avg. Annual Effect (Grades 5-8)
ELEMENTARY: -0.256* SECONDARY: N/A OVERALL: -0.256*

Pine Bluff, AR
Open-Enrollment
Grades Served: 5-8
Year Opened: 2013

<b>LITERACY</b> Avg. Annual Effect (Grades 5-8)
ELEMENTARY: -0.199 SECONDARY: N/A OVERALL: -0.199

<b>Elementary Effects (Benchmark Exams)</b>					
<b>Year</b>	<b>#Charter Students</b>	<b>Benchmark Effect- Math</b>		<b>#Charter Students</b>	<b>Benchmark Effect- Literacy</b>
<b>11-12</b>	-	-		-	
<b>12-13</b>	-	-		-	
<b>13-14</b>	58	-0.256	*	54	-0.199
<b>Avg. Annual Effect</b>		<b>-0.256</b>	<b>*</b>		<b>-0.199</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

Elementary Effects

**Academic Impacts of Quest Middle School of Pine Bluff on Math Benchmarks, 2013-14**

		2013-14	
Grades Served		5-8	
Total Enrollment		92	
Grades Included		5-8	
Enrollment in Included Grades		92	
Sample Size (Treatment)		58	
Sample Size (% of Inc. Grade Enrollment)		63%	
			<b>Avg. Effect</b>
OLS Treatment Effect	-0.256 *		<b>-0.256*</b>
Robust Standard Error	(0.132)		<b>(0.132)</b>

**Academic Impacts of Quest Middle School of Pine Bluff on Literacy Benchmarks, 2013-14**

		2013-14	
Grades Served		5-8	
Total Enrollment		92	
Grades Included		5-8	
Enrollment in Included Grades		92	
Sample Size (Treatment)		54	
Sample Size (% of Inc. Grade Enrollment)		59%	
			<b>Avg. Effect</b>
OLS Treatment Effect	-0.199		<b>-0.199</b>
Robust Standard Error	(0.124)		<b>(0.124)</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—Benchmarks**

***Baseline Equivalency for Quest Middle School of Pine Bluff in Math, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	58	58	-	
<b>Range of Grades Served</b>	5-8	5-8	-	
<b>Range of Grades in Analysis</b>	5-8	5-8	-	
<b>Average Grade</b>	6.53	6.53	-	1.000
<b>Prior Year Math Z-Score</b>	-1.04	-1.04	(0.00)	0.996
<b>Prior Year Literacy Z-Score</b>	-1.03	-0.93	(0.10)	0.597
<b>% FRL</b>	1.00	0.98	0.02	0.315
<b>% Minority</b>	1.00	1.00	-	1.000
<b>% Female</b>	0.50	0.52	(0.02)	0.853

***Baseline Equivalency for Quest Middle School of Pine Bluff in Literacy, 2013-14***

	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	54	54	-	
<b>Range of Grades Served</b>	5-8	5-8	-	
<b>Range of Grades in Analysis</b>	5-8	5-8	-	
<b>Average Grade</b>	6.56	6.56	-	1.000
<b>Prior Year Math Z-Score</b>	-0.96	-0.92	(0.04)	0.804
<b>Prior Year Literacy Z-Score</b>	-0.87	-0.87	(0.00)	0.996
<b>% FRL</b>	1.00	0.96	0.04	0.153
<b>% Minority</b>	1.00	1.00	-	1.000
<b>% Female</b>	0.56	0.46	0.09	0.336

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

# RIDGEROAD CHARTER

## OVERALL EFFECT

**+0.109\*\*\***

*Significant at the 1% level*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 7-8)

ELEMENTARY: +0.199\*\*\*  
SECONDARY: N/A  
OVERALL: +0.199\*\*\*

North Little Rock, AR  
District Conversion  
Grades Served: 7-8  
Year Opened: 2003  
Year Closed: 2012

**LITERACY**  
Avg. Annual Effect  
(Grades 7-8)

ELEMENTARY: -0.017  
SECONDARY: N/A  
OVERALL: -0.017

Elementary Effects (Benchmark Exams)					
Year	#Charter Students	Benchmark Effect- Math		#Charter Students	Benchmark Effect- Literacy
11-12	269	+0.199	***	263	-0.017
12-13	-	-		-	-
13-14	-	-		-	-
<b>Avg. Annual Effect</b>		<b>+0.199</b>	<b>***</b>		<b>-0.017</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

Elementary Effects

<i>Academic Impacts of Ridgeroad Charter Middle School on Math Benchmarks, 2011-12</i>			
2011-12			
Grades Served	7-8		
Total Enrollment	417		
Grades Included	7-8		
Enrollment in Included Grades	417		
Sample Size (Treatment)	269		
Sample Size (% of Inc. Grade Enrollment)	65%		
			<b>Avg. Effect</b>
OLS Treatment Effect	<b>+0.199</b>	<b>***</b>	<b>+0.199 ***</b>
Robust Standard Errors	(0.045)		<b>(0.045)</b>

<i>Academic Impacts of Ridgeroad Charter Middle School on Literacy Benchmarks, 2011-12</i>			
2011-12			
Grades Served	7-8		
Total Enrollment	417		
Grades Included	7-8		
Enrollment in Included Grades	417		
Sample Size (Treatment)	263		
Sample Size (% of Inc. Grade Enrollment)	63%		
			<b>Avg. Effect</b>
OLS Treatment Effect	<b>-0.017</b>		<b>-0.017</b>
Robust Standard Errors	(0.054)		<b>(0.054)</b>

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Baseline Equivalencies—Benchmarks

### *Baseline Equivalency for Ridgeroad Charter Middle School in Math, 2011-12*

	Charter	Comparison	Difference	P-Value
<b>Number of Observations</b>	269	269	-	
<b>Range of Grades Served</b>	7-8	7-8	-	
<b>Range of Grades in Analysis</b>	7-8	7-8	-	
<b>Average Grade</b>	7.45	7.45	-	1.000
<b>Prior Year Math Z-Score</b>	-0.36	-0.35	(0.01)	0.919
<b>Prior Year Literacy Z-Score</b>	-0.36	-0.31	(0.05)	0.534
<b>% FRL</b>	0.89	0.75	0.14 ***	<0.001
<b>% Minority</b>	0.88	0.71	0.17 ***	<0.001
<b>% Female</b>	0.49	0.53	(0.04)	0.388

### *Baseline Equivalency for Ridgeroad Charter Middle School in Literacy, 2011-12*

	Charter	Comparison	Difference	P-Value
<b>Number of Observations</b>	263	263	-	
<b>Range of Grades Served</b>	7-8	7-8	-	
<b>Range of Grades in Analysis</b>	7-8	7-8	-	
<b>Average Grade</b>	7.49	7.49	-	1.000
<b>Prior Year Math Z-Score</b>	-0.34	-0.40	0.06	0.427
<b>Prior Year Literacy Z-Score</b>	-0.37	-0.36	(0.01)	0.925
<b>% FRL</b>	0.89	0.75	0.15 ***	<0.001
<b>% Minority</b>	0.88	0.74	0.14 ***	<0.001
<b>% Female</b>	0.50	0.50	-	1.000

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

# ROGERS NEW TECH HIGH

## OVERALL EFFECT

**-0.391\*\*\***

*Significant at the 1% level*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 9-10)

ELEMENTARY: N/A  
SECONDARY: -0.391\*\*\*  
OVERALL: -0.391\*\*\*

Rogers, AR  
District Conversion  
Grades Served: 9-10  
Year Opened: 2013

**LITERACY**  
Avg. Annual Effect  
(Not Included)

ELEMENTARY: N/A  
SECONDARY: N/A  
OVERALL: N/A

Secondary Effects (EOC Exams)				
Year	#Charter Students	EOC Effect-Math	#Charter Students	EOC Effect-Literacy
11-12	-	-	-	-
12-13	-	-	-	-
13-14	78	-0.391 ***	-	-
<b>Avg. Annual Effect</b>		<b>-0.391 ***</b>		

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

Secondary Effects—Geometry EOC

<i>Academic Impacts of Rogers New Tech High School on Geometry EOC, 2013-14</i>				
2013-14				
Grades Served	9-10			
Total Enrollment	291			
Grades Included	9-10			
Enrollment in Included Grades	291			
Sample Size (Treatment)	78			
Sample Size (% of Inc. Grade Enrollment)	27%			
				<b>Avg. Effect</b>
OLS Treatment Effect	<b>-0.391</b>	<b>***</b>	<b>-0.391</b>	<b>***</b>
Robust Standard Error	(0.132)		<b>(0.132)</b>	

Baseline Equivalency—Geometry EOC

<i>Baseline Equivalency for Rogers New Tech High School in Geometry, 2013-14</i>				
	Charter	Comparison	Difference	P-Value
Number of Observations	78	78	-	
Range of Grades Served	9-10	9-10	-	
Range of Grades in Analysis	9-10	9-10	-	
Average Grade	9.82	9.82	-	1.000
Baseline Algebra Score	0.10	0.10	(0.00)	0.998
% FRL	0.55	0.55	-	1.000
% Minority	0.55	0.59	(0.04)	0.628
% Female	0.33	0.37	(0.04)	0.615

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

# WASHINGTON ACADEMY

**OVERALL EFFECT**

**+0.039** *Not statistically significant*

**MATHEMATICS**  
Avg. Annual Effect  
(Grades 9-10)

ELEMENTARY: N/A  
SECONDARY: +0.166  
OVERALL: +0.166

Texarkana, AR  
District Conversion  
Grades Served: 9-12  
Year Opened: 2013

**LITERACY**  
Avg. Annual Effect  
(Grade 11)

ELEMENTARY: N/A  
SECONDARY: -0.310  
OVERALL: -0.310

Secondary Effects (EOC Exams)				
Year	#Charter Students	EOC Effect-Math	#Charter Students	EOC Effect-Literacy
11-12	-	-	-	-
12-13	-	-	-	-
13-14	15	+0.166	16	-0.310
<b>Avg. Annual Effect</b>		<b>+0.166</b>		<b>-0.310</b>

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level  
No asterisks means the effect is not statistically significant.  
Effect sizes expressed as a percentage of one standard deviation in the test score distribution.  
Years/exams for which fewer than 15 students could be matched are excluded from analysis.*

## Secondary Effects

<b>Academic Impacts of Washington Academy on Geometry EOC, 2013-14</b>		
<b>2013-14</b>		
Grades Served	9-12	
Total Enrollment	99	
Grades Included	9-10	
Enrollment in Included Grades	15	
Sample Size (Treatment)	15	
Sample Size (% of Inc. Grade Enrollment)	100%	
		<b>Avg. Effect</b>
OLS Treatment Effect	<b>+0.166</b>	<b>+0.166</b>
Robust Standard Error	(0.187)	<b>(0.187)</b>

<b>Academic Impacts of Washington Academy on 11th Grade Literacy EOC, 2013-14</b>		
<b>2013-14</b>		
Grades Served	9-12	
Total Enrollment	99	
Grades Included	11	
Enrollment in 11th Grade	30	
Sample Size (Treatment)	16	
Sample Size (% of 11th Grade Enrollment)	53%	
		<b>Avg. Effect</b>
OLS Treatment Effect	<b>-0.310</b>	<b>-0.310</b>
Robust Standard Error	(0.215)	<b>(0.215)</b>

\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level

No asterisks means the effect is not statistically significant.

Effect sizes expressed as a percentage of one standard deviation in the test score distribution.

Years/exams for which fewer than 15 students could be matched are excluded from analysis.

**Baseline Equivalencies—EOCs**

<b>Baseline Equivalency for Washington Academy in Geometry, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	15	15	-	
<b>Range of Grades Served</b>	9-12	9-12	-	
<b>Range of Grades in Analysis</b>	9-10	9-10	-	
<b>Average Grade</b>	9.80	9.80	-	1.000
<b>Baseline Algebra Score</b>	-1.01	-1.01	-	1.000
<b>% FRL</b>	0.80	0.73	0.07	0.666
<b>% Minority</b>	0.20	0.20	-	1.000
<b>% Female</b>	0.60	0.53	0.07	1.000

<b>Baseline Equivalency for Washington Academy in 11th Grade Literacy, 2013-14</b>				
	<b>Charter</b>	<b>Comparison</b>	<b>Difference</b>	<b>P-Value</b>
<b>Number of Observations</b>	16	16	-	
<b>Range of Grades Served</b>	9-12	9-12	-	
<b>Range of Grades in Analysis</b>	11	11	-	
<b>Average Grade</b>	11.00	11.00	-	1.000
<b>8th Grade Literacy Score</b>	-1.04	-1.04	0.00	0.994
<b>% FRL</b>	0.88	0.75	0.13	0.365
<b>% Minority</b>	0.75	0.81	(0.06)	0.669
<b>% Female</b>	0.56	0.56	-	1.000

*\*Significant at the 90% confidence level \*\*Significant at the 95% level \*\*\*Significant at the 99% level*

*No asterisks means the effect is not statistically significant.*

*Effect sizes expressed as a percentage of one standard deviation in the test score distribution.*

*Years/exams for which fewer than 15 students could be matched are excluded from analysis.*