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Movin' on Up: An Examination of Value-Added Growth During School Transition Years in Arkansas

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ABSTRACT

This study assesses the impact school transitions have on grade-level value-added growth scores in Arkansas. Arkansas is unique in that the autonomy of setting building level transitions is left to individual districts. This distinction allows researchers to make comparisons between student groups that where students transitioned upward to a new building and those who did not. Using data covering five different school years, this study evaluates mathematics and English language-arts value-added growth scores of grade levels that transitioned to a new building and compared them to grade-level growth scores of buildings where students did not make a transition. Using regression analyses, we find that overall, there are not consistent results showing less growth during a transition year. However, we find a pattern that shows that students who transition in 6^{th} and 7^{th} grade, common transition years in Arkansas, demonstrate lower value-added growth-scores compared to student groups who did not transition. These results are similar for both mathematics and ELA. This study adds to current literature about value-added growth in Arkansas. We discuss our findings in the context of prior transition year literature and conclude with policy suggestions.

I. **INTRODUCTION**

Students typically attend at least three schools throughout their K-12 education; an elementary school, a middle school, and a high school. The years in which students transition upward from one school to the next can be challenging for students, teachers, and families. When students move to a different school, they not only transition from being the oldest students in a school to the youngest students, but they may also be moving from a relatively small, more personalized school to a larger school, both in terms of the physical size of the school and the number of students (Anderson et al., 2000). Students transitioning to a new school are tasked with learning a new schedule with changing classes, developing new teacher-student relationships with multiple teachers, and understanding a new social structure.

Student learning could be negatively impacted during a year of transition due to these factors. In the state of Arkansas, individual school districts determine when students transition upwards to a new school building. The variety of transition years statewide allows for comparisons to be made between students who transitioned to new schools and students who remained in the same school. In this study, we employ grade-level value-added growth scores to examine the differences in academic success between students in grades requiring a transition to a new school and those students who remain at their prior school for the subsequent grade.

II. LITERATURE REVIEW

Research on school transition indicates that some students take the transition to a new school as an opportunity to thrive, showing positive academic achievement and psychological development (Bronstein et al., 1996; Chung et al.,1998), while other students have difficulty adjusting to a new educational setting. Prior research focusing on students transitioning between schools finds that students might experience loss of self-esteem, increased levels of anxiety and depression, and begin to exhibit risk-taking behaviors such as using drugs or alcohol (Bronstein et al., 1996; Aikins et al., 2005). Academically, transition years are noteworthy since new schools are associated with students having higher academic (Bronstein et al., 1996; Eccles et al., 1984; Feldlaufer et al., 1988). Several studies find that when a student transitions from a primary school to a version of secondary school, academic motivations decline, typically resulting in lower academic achievement (Aikins et al., 2005; Bronstein et al., 1996; Chung et al., 1998; Crocket et al., 1989; French et al., 2000; Marraccini et al., 2021; Simmons et al., 1979). Researchers hypothesized that lower academic performance could be due to increased class sizes, decline in school or teacher satisfactions, a greater emphasis on relative ability and competitions as contrasted with effort and improvement, or an increased amount of behavior disturbances in the classroom (Anderson et al., 2000; Bronstein et al., 1996).

Two groups of students that have the greatest difficulty with transitions are students of color and students from households with low-socio-economic status (SES) (Anderson et al., 2000; Seidman et al., 1996; Marraccini et al., 2021). Explanations for why students from low SES households may experience more difficulty with academics when transitioning schools include lack of parental interest in schooling, parents being unable to supplement the learning process with educational activities such as field trips or attendance at cultural events, and/or the

degree in which parents talk with their children about school (Rice, 2001). These elements may lead to student failure to successfully navigate the transition from one school to another and factor into a student's gradual disengagement from the educational process. For students of color, a transition year could involve changes in the racial composition of the school environment, which may result in a change of perception of their educational environment and their relationship with peers and staff. Studies show that when students of color transition, there is a negative effect on their academic achievement and course grades (French et al., 2000). For these reasons, students of color and students from low SES backgrounds have a more difficult time with the transition to a new school resulting in decreased academic performance.

The previously mentioned studies focus on student achievement as the metric for student success during a transition year. Achievement can be defined as competencies that enable a student to succeed in school and society (Genesee, 2008). In school settings, achievement is typically measured by performance on standardized achievement tests focusing on the core subjects in school, math and English language arts. Many states, however, also measure student academic growth as a measure of student success. Value-added growth is a way for educators to assess if students are improving academically, reflecting how much a student is expected to learn and grow each year based on their own score history, regardless of how high, low, or average their prior achievement was.

As prior research about school transition years has identified lower academic achievement, one might expect that students who transition to a new school building may demonstrate lower academic growth compared to students in the same grade level who do not transition to a new building. In our descriptive study, we examine if grade-level value-added growth scores are lower for students who transition to a new school than it is for students who do

not transition. Our study includes an analysis of students of color and student from low SES households. This study will identify relationships between school transitions and academic growth, and suggest strategies that stakeholders such as educators, parents, and policymakers can use to better support student learning after a school transition.

III. DATA AND SAMPLE

This study is descriptive in nature; it does not tell us what causes the differences in grade-level value-added growth scores. The purpose of this study, rather, is to evaluate whether value-added growth is negatively related to transitioning to a new school. We examined public data Arkansas Department of Education including school name, the grades served, enrollment numbers by grade, mathematics and English language arts value-added growth scores by grade level and student population for 3rd - 10th grade. We gathered data starting in the 2015-16 school year, the first-year value-added scores were available, through the 2020-21 school year. The 2019-20 school year was excluded due to lack of assessment data as a result of the Covid-19 pandemic. For each school year of our sample, data was collected from over 3,000 Arkansas public schools.

Value-Added Growth Scores

The most common tools used for measuring student academic success are proficiency and growth. Proficiency indicates that a student has met the required criteria set by a state to be considered on grade level, while growth measurements show how students' test score changed relative to students with similar prior achievement. Unlike proficiency, growth is not highly correlated with outside of school characteristics like poverty (Hegedus, 2018). Examining

transition years by evaluating student growth instead of proficiency may help separate the effects of non-school related factor from actual student learning.

The state of Arkansas uses value-added growth scores in school accountability. Students in grades 3-10 are assessed annually and each student receives a value-added score for growth in mathematics and ELA that ranges from negative to positive values. A positive value-added score represents that the student made more growth than other students with similar test scores histories. A score of zero represents that the student grew as much as other students with similar test score histories. A negative value-added score represents that the student did not grow as much as other student with similar test score histories. These value-added scores have a mean value of 0, and the standard deviation at the school level is about 0.07 (School Growth Explanation: School Value-Added Growth, 2021).

Individual student growth scores are used to calculate grade level value-added score for the school. The student growth scores are averaged and transformed into grade level growth scores using Equation 1 below:

$$\text{Grade Level Growth Score} = (\text{Average of Student Level Value-Added Score} \times 35) + 80.00 \quad (1)$$

This step is done twice, once for mathematics and once for ELA. The grade level growth scores range from 60 - 100. A score of 80 means that on average, students in the grade made the same amount of growth as students with similar test score histories. A score below 80 means that, on average, students in that grade made less growth than students with similar test score histories. Scores above 80 represent that students in that grade, on average, demonstrated more

growth than students with similar test score histories. Descriptives of grade-level growth scores in mathematics and ELA from the 2020-21 school year are presented in Table 1 below.

Table 1

Average Grade-Level Growth by Content Area and Student Groups, 2020-21, Unweighted

	Mathematics		ELA	
	Mean	Standard Deviation	Mean	Standard Deviation
3rd Grade				
All	78.90	6.43	79.27	5.21
White	79.79	7.05	79.45	5.84
Black	76.54	9.41	77.34	7.57
FRL	77.82	6.22	78.33	5.12
4th Grade				
All	79.07	7.25	79.97	3.52
White	79.34	8.54	80.16	4.11
Black	76.93	10.0	79.09	5.71
FRL	77.99	6.89	79.56	3.57
5th Grade				
All	79.47	6.37	79.87	4.13
White	79.63	7.78	80.57	4.63
Black	77.46	9.29	77.14	6.17
FRL	79.03	6.47	79.51	4.29
6th Grade				
All	79.95	5.28	80.29	3.60
White	79.81	6.24	80.41	3.99
Black	79.42	8.00	78.83	5.67
FRL	79.55	5.28	79.99	3.80
7th Grade				
All	79.33	4.01	79.76	3.06
White	79.41	4.53	79.73	3.76
Black	78.50	5.24	79.29	5.05
FRL	78.87	3.92	79.60	3.01
8th Grade				
All	79.49	3.93	79.74	3.26
White	79.92	4.71	80.02	3.53
Black	77.93	5.29	79.06	4.58
FRL	78.99	3.79	79.56	3.67
9th Grade				
All	80.21	3.73	80.01	2.84
White	80.33	3.44	80.10	2.91
Black	79.10	5.63	79.79	3.22
FRL	80.08	3.92	79.49	5.48
10th Grade				
All	79.70	2.78	79.73	2.55
White	79.85	3.38	79.86	3.19
Black	79.16	4.82	79.80	5.04
FRL	79.72	3.02	79.78	2.86

Transition Year Identification

To compare the grade-level growth scores of students who transitioned to a new school to those who remained in the same school, we first identified at what grade level a school transition occurred. For example, if a district had three schools, one that serves students in K-4, one 5-8, and one 9-12, the transition grades would be in 5th and 9th grades. In Arkansas, there are no regulations regarding transitions, allowing each school district to configure grades served by buildings. School transitions can occur at any grade, but our analysis is limited our analysis to transitions in grades 3-10 due to availability of value-added scores. Transition grades were identified using the data from the ADE data center. The number of schools that transition at each grade level from 3rd - 10th grade in the 2020-21 school year is presented in Table 2. Seventh grade is the most common transition year with 167 schools identifying 7th grade as the beginning grade of the building. The pattern is fairly consistent, and a full table of transition years from 2015 – 2021 can be found in the appendix in Table A.1.

Table 2
Count of Arkansas Schools by Transition Year, 2020-21

	Grade Levels							
	3rd	4th	5th	6th	7th	8th	9th	10th
Transition	29	19	72	84	167	18	120	33
Non-Transition	456	460	375	270	157	302	190	268
Total	485	479	447	354	324	320	310	301

IV. EMPIRICAL APPROACH

Weighting and Averaging Value-Added Growth Scores

As grade-level value-added growth scores are calculated as an average of student-level scores, it is necessary to calculate an average for both the transition and non-transition groups that is weighted by the number of students in the grade. The weighted value-added growth score was calculated using Equation 2 below:

$$\text{Weighted Value-Added Growth Score} = \left(\text{School Grade level value-added growth score} \times \text{Student enrollment at that grade}\right) \quad (2)$$

This equation was used to calculate value-added growth score for mathematics and ELA for the combined school population, white students, Black students, and students who qualify for free and reduced-price lunch. We focused on these groups since 65% of schools in the state of Arkansas are designated as low income and nearly 20% of the state's student population is Black. In our initial plan, we tried wanted to include students receiving special education services and students identified as Hispanic into our analysis, however, there was notAdditionally, certain students might not have a calculatable growth score due to lack of prior test scores.

Lastly, a value was calculated to serve as the overall score for the identified grade level. To do this, we used Equation 3 below: (3)

$$\text{Group Average Value-Added Growth Score} = \frac{\text{Sum of Weighted Group Value-Added Growth Scores}}{\text{Sum of Enrollment}} \quad (3)$$

We used this equation twice per grade and content area; first using weighted growth scores for schools where there was not a transition upwards to a new school in that grade, then again for schools where students did transition to a new school for that grade. We then compared the values to identify if students in grade levels that transition showed, on average, less growth than students in grades that did not transition to a new building. We replicated this comparison of average growth scores for white students, Black students, and students eligible for free or reduced-price lunch (FRL), which we use as a proxy for low socio-economic status. Descriptive tables comparing weighted average grade-level growth scores for mathematics and ELA are shown in Tables 3 and 4, respectively. Comparison tables from 2015-2019 are provided in Tables A.2 – A.9 in the appendix.

Table 3

Average Mathematics Grade-Level Growth Comparisons by Transition Group, 2020-21

	Grade Levels							
	3rd	4th	5th	6th	7th	8th	9th	10th
All Students								
Transition	78.12	81.12	79.92	79.42	80.08	80.17	80.01	79.65
Non-Transition	79.97	79.86	79.97	80.47	79.82	79.93	80.03	79.44
Difference	*-1.85*	*1.26*	*-0.05*	*-1.05*	*0.26*	*0.24*	*-0.02*	*0.21*
White Students								
Transition	79.49	82.06	79.96	79.84	80.70	80.72	80.49	79.77
Non-Transition	81.29	80.81	80.51	81.07	80.50	80.76	80.32	79.79
Difference	*-1.80*	*1.25*	*-0.55*	*-1.23*	*0.20*	*-0.04*	*0.17*	*-0.02*
Black Students								
Transition	72.69	73.59	76.19	77.58	77.72	79.14	78.44	78.92
Non-Transition	74.15	74.10	75.46	75.78	77.29	77.75	78.35	78.20
Difference	*-1.46*	*-0.51*	*0.73*	*1.80*	*0.43*	*1.39*	*0.09*	*0.72*
FRL Students								
Transition	78.56	80.13	78.98	78.28	78.91	79.51	79.42	79.67
Non-Transition	79.59	78.99	79.17	79.97	78.33	78.87	79.30	78.94
Difference	*-1.03*	*1.14*	*-0.19*	*-1.69*	*0.58*	*0.64*	*0.12*	*0.73*

Note. The difference is calculated by taking the transition year average growth score and subtracting the non-transition year growth score.

From Table 3, we can identify that in 44% of the comparisons, students who transition to a new school show lower value-added growth scores in mathematics compared to students who do not transition. In 3rd grade, we see a negative value for all comparisons. In both 5th and 6th grade, we see negative values for three out of the four student groups.

Table 4

Average ELA Grade-Level Growth Comparisons by Transition Group, 2020-21

	Grade Levels							
	3rd	4th	5th	6th	7th	8th	9th	10th
All Students								
Transition	78.00	80.12	80.15	79.29	79.77	80.33	79.65	79.41
Non-Transition	80.05	80.27	80.00	80.56	80.09	79.96	80.37	79.43
Difference	*-2.05*	*-0.15*	*0.15*	*-1.27*	*-0.32*	*0.37*	*-0.72*	*-0.02*
White Students								
Transition	78.71	80.61	80.26	80.25	79.88	80.54	80.00	79.29
Non-Transition	80.51	80.65	80.68	80.75	80.32	80.16	80.32	79.61
Difference	*-1.80*	*-0.04*	*-0.42*	*-0.50*	*-0.44*	*0.38*	*-0.32*	*-0.32*
Black Students								
Transition	72.69	77.04	76.47	78.46	78.23	79.77	78.42	79.44
Non-Transition	75.40	77.67	76.22	75.19	78.02	78.67	79.59	78.53
Difference	*-2.71*	*-0.63*	*0.25*	*3.27*	*0.21*	*1.10*	*-1.17*	*0.91*
FRL Students								
Transition	77.51	78.97	78.62	78.47	79.33	79.7	79.72	79.9
Non-Transition	79.32	79.00	78.24	80.59	79.27	79.58	79.85	78.83
Difference	*-1.81*	*-0.03*	*0.38*	*-2.12*	*0.06*	*0.12*	*-0.13*	*1.07*

Note. The difference is calculated by taking the transition year average growth score and subtracting the non-transition year growth score.

In Table 4, we see similar results in our comparisons for ELA as we do for mathematics. In 63% of the comparisons, students who transition to a new school show lower value-added growth scores in ELA compared to students who do not transition. Once again, 3rd grade has negative values for all student groups. Additionally, 4th grade, and 9th grade have also have all negative values for all comparisons. In 6th grade, three out of four values for our comparisons are negative. Notably, 6th grade students identified as Black had higher growth scores following a transition in both mathematics and ELA compared to 6th graders in the same student population who did not transition buildings. We used these initial findings to guide our next steps.

Linear Regressions

To more rigorously examine the relationship between grade-level growth and student transitions, we employ an ordinary least squares model (OLS) to predict school grade level growth scores given the characteristic of if students transitioned to a new school or not for that grade. To make this comparison, we ran a regression using Equation 4 below:

$$\text{Grade-Level Growth Scores}_g = \beta_0 + \beta_1 \text{TransitionYear} + \varepsilon \quad (4)$$

In this equation, our outcome of interest is grade level growth scores. β_1 is a binary variable that takes the value 1 if a grade made a transition and takes a value of 0 if no transition took place. We ran this equation by grade and content area. In the first set of regressions, we focused on the combined student population of all students. Starting with 3rd grade, the first regression examined the grade-level growth for mathematics with β_1 taking a value of 1 if the students transition to new school and taking a value of 0 if they remain at the same building as the prior grade. This was repeated for 4th grade through 10th grade. We used the same process and OLS equation for grade-level growth for literacy for 3rd grade through 10th grade. The same method was used to predict scores grade-level growth for mathematics and literacy for white students, Black students, and students who are eligible for free or reduced-price lunch.

V. RESULTS

Mathematics

The estimated relationships between school transitions and grade-level growth scores for mathematics for the 2020-21 school year are presented in Table 5. The values can be interpreted as follows: Student groups that transitioned upwards to a new school in grade X are associated with an increase or decrease in the average grade-level growth score compared to the average

grade-level growth score of students who did not transition to a new school in grade X. The data presented in Columns 2 represents the coefficient in grade-level growth scores for all students that transitioned compared to those who did not. The remaining columns represents the coefficient in grade-level growth scores for our student population groups of interest.

Table 5

Estimated Effects of School Transition on Grade-Level Mathematics Growth Scores, by Grade and Student Population, 2020-21

Grade Level	All Students	White Students	Black Students	FRL Students
3rd	-1.15	-1.12	-0.25	-0.99
4th	1.51	1.42	-0.21	1.71
5th	-0.68	-0.40	-1.54	-1.19
6th	-1.48**	-2.53***	0.09	-1.05
7th	-0.49	-0.34	-0.16	-0.51
8th	-0.09	0.35	0.88	-0.72
9th	-0.40	0.35	0.24	-0.31
10th	-0.02	0.07	0.76	-0.07

*** p<0.01, **p<0.05, *p<0.1

In 2020-21, a transition to a new school in the 6th grade is associated with a 1.48-point difference in mathematics growth compared to no transition in the 6th grade. This value is statistically significant at the 95% level of confidence. For white students, a transition to a new school in the 6th grade is associated with a 2.53-point difference in mathematics growth. This value is statistically significant at the 99% level of confidence. Apart from 6th grade, there are not statistically significant negative or positive relationships in the estimated effects of transition year and grade-level mathematics growth. Full tables of estimated effects for mathematics for 2015 – 2019 can be found in the appendix in Tables A.10- A.13.

Our result continually showed statistically significant results for 6th and 7th grade throughout our years of interest. We isolated these two grades to further examine this pattern. The results presented in Table 6 show the estimated effects of 6th and 7th grade transitions in grade- level mathematics scores over the years of our analysis.

Table 6

Estimated Effects of School Transition on Grade-Level Mathematics Growth Scores in 6th and 7th Grade by Student Populations, 2015-2021

	2015-16	2016-17	2017-18	2018-19	2020-21
6th Grade					
All Students	-2.08***	-1.36**	0.53	-1.60**	-1.48**
White Students	-2.03**	-1.37*	0.44	-1.62**	2.53***
Black Students	-3.18***	-0.94	-2.10*	-0.77	0.09
FRL Students	-1.63**	-1.20*	-2.04***	-1.98***	-1.05
7th Grade					
All Students	-0.52**	-1.65***	0.26	-1.15**	-0.49
White Students	-0.38	-1.46**	-0.15	-1.72***	-0.34
Black Students	0.98	-1.06	-2.17**	0.11	-0.16
FRL Students	-0.43*	-2.09***	-1.29**	-0.66	-0.51

*** p<0.01, **p<0.05, *p<0.1

A decrease in growth scores for transitioned 6th graders is consistent across the five school years that were examined. A negative value can be interpreted as indicating that students who transition to a new building in the 6th grade evidenced lower mathematics growth compared to 6th grade students who do not transition to a new building. When focusing on mathematics growth scores for our targeted student groups during a school transition in the 6th grade from 2015-2021, the estimated effects return a negative value in 80% of analyses. Fourteen out of sixteen, or 70%, of these estimated negative effects are statistically significant or are approaching statistical significance. Although not evidenced in 2020-21, we find a similar trend when we focus on

mathematics growth scores during a transition that happens in the 7th grade. From 2015-2021, the estimated effects of a transition year in the 7th grade of our target student groups returns a negative value in mathematics growth scores in 95% of analyses. Nine out of nineteen, or 47%, of these of these estimated effects are statistically significant or are approaching statistical significance.

English Language Arts

Table 7

Estimated Effects of School Transition on Grade-Level ELA Growth Scores, by Grade and Student Population, 2020-21

Grade Level	All Students	White Students	Black Students	FRL Students
3rd	-1.78*	-1.72	-1.03	-1.27
4th	-0.26	-0.46	-1.09	-0.41
5th	-0.54	-1.04*	-0.59	-0.78
6th	-1.84***	-1.78***	-2.18***	-1.73***
7th	-0.77**	-0.52	0.39	-0.72**
8th	0.72	0.44	1.29	0.65
9th	-0.37	-0.02	-0.43	-0.22
10th	-0.34	-0.71	-0.84	-0.45

*** p<0.01, **p<0.05, *p<0.1

As shown in Table 7, when focusing on ELA growth, we find that estimated effects of school transitions are not statistically significant results for most grades. Like mathematics, however, a transition in the 6th grade produces statistically significant negative results. For all students, a transition to a new school in the 6th grade is associated with a -1.84-point difference in ELA growth compared to no transition in the 6th grade. This estimation is statistically significant at the 99% level of confidence. Likewise, our estimations for white students, Black students, and FRL students all returned negative estimates that ranged from a -1.73 to -2.18-point difference compared to students who do not transition. All 6th grade estimated effects are

statistically significant at the 99% level of confidence. Full tables of estimated effects for mathematics for 2015 – 2019 can be found in the appendix in Tables A.14- A.17.

Our results also returned statistically significant negative estimates for a 7th grade transition. A transition in the 7th grade is associated with a -0.77-point difference in ELA growth scores compared to groups that did not transition in the 7th grade. Additionally, groups of FRL students who transition in the 7th grade are associated with a -0.72-point difference in ELA growth scores compared to groups of FRL students that did not transition in the 7th grade. Both values are statistically significant at the 95% level of confidence.

Our results, presented in Table 8, show that the trend of 6th and 7th grade transitions being associated with a negative estimated effects in student growth for ELA are consistent across all analyzed school years. ELA growth scores after a school transition in the 6th grade from 2015-2021 are associated with a negative value for all years and all targeted student populations. From 2015-2021, the estimated effects of a transition year in the 7th grade of our target student groups returns a negative value in ELA growth scores in 80% of comparisons. Twenty nine out of forty, or 72%, of these of these estimated effects for both 6th and 7th grade ELA growth scores are statistically significant or are approaching statistical significance.

Table 8

Estimated Effects of School Transition on Grade-Level ELA Growth Scores in 6th Grade and 7th Grade by Student Populations, 2015-2021

	2015-16	2016-17	2017-18	2018-19	2020-21
6th Grade					
All Students	-1.93***	-1.35**	-0.55	-2.05**	-1.84***
White Students	-2.73***	-1.11*	-0.94	-2.36***	-1.78***
Black Students	-2.35*	-1.61	-2.63***	-1.96***	-2.18***
FRL Students	-1.28**	-1.33**	-2.18***	-2.38***	-1.73***
7th Grade					
All Students	-2.74***	-1.26***	-0.11	-1.18***	-0.77**
White Students	-2.51***	-1.10**	-0.23	-1.51***	-0.52
Black Students	-0.76	-1.12	-1.17	-0.68	0.39
FRL Students	-2.97***	-1.54***	-1.63***	-1.24***	-0.72**

*** p<0.01, **p<0.05, *p<0.1

Overall Results

Our analysis over five school years continually returned negative and statistically significant values for 6th and 7th grade in both mathematics and ELA. These negative results can be interpreted as students who transitioned to a new school for 6th or 7th grade show less value-added growth compared to students who do not transition. With the exception of 6th and 7th grades, our analysis produced a small number of negative statistically significant values. Prior research suggested that student achievement could be statistically negatively impacted by transition to a new school, we so hypothesized that student growth would also be negatively impacted. The results, however, do not support this hypothesis. We find little relationship between a school transition and student growth. Transitions in the 6th and 7th grade, however, result in a greater number of statistically significant negative effects were in ELA compared to mathematics. Grade-level growth scores are estimated to be lower in ELA when transitions to a new building occur compared to students who do not transition to a new building. These

statistically significant estimated effects range from a -0.41 to a -4.96-point difference compared to the ELA growth scores of students who did not transition. Lastly, among the student populations examined, student groups who are eligible for free and reduced-price lunch are more likely to have lower growth scores when they transition to a new building compared to FRL students who do not transition. More specifically, when FRL students make a transition in the 6th and 7th grade, the negative estimated effects of the transition are nearly all statistically significant or are approaching statistical significance. Because of this, we can assume that our results from FRL students are not due to chance and that this student group consistently experiences lower growth in the year of a school building transition. The trends we observed from 2020-21 are similar across previous school years. Estimates from grade 6 and 7 repeatedly showed negative statistically significant results. The 7th grade estimated values are of importance because 7th grade is one of the most frequent times for a school transition to take place in Arkansas public schools. Results from 2015-2019 can be found in Tables A.10 – A.17

VI. DISCUSSION AND POLICY RECOMMENDATIONS

This study examined grade-level value-added growth scores during the years that Arkansas students make a transition to a new building. Our sample included all public schools in Arkansas. Our analysis focused on transition years from 3rd grade through 10th grade, the range of years where all students are assessed for their individual student growth in mathematics and ELA. While this study did not provide any causal associations to the impact of a transition year, it provides valuable information for stakeholders such as parents, school building leaders, teachers, and education researchers.

School Transitions in Arkansas

Research on school transition years primarily focuses on changes in students' achievement scores during the transition. Our study focuses on differences in average grade-level value-added growth scores for different student populations during the transition year. Our examination of value-added growth scores is more reflective of student learning because growth scores are less influenced by prior achievement or outside of school factors than achievement scores. Additionally, an individual's growth scores are relative to other students with similar test score histories which allowed for comparisons to be made about school transition years.

We found that transitioning to a new school has no consistent or statistically significant negative relationships with grade-level average student growth in either mathematics or English language arts. Our analysis did reveal, however, that school transitions in the 6th and 7th grade are frequently associated with statistically significantly lower growth scores in both mathematics and ELA.

We repeatedly find that a transition in the 6th grade is associated with a lower growth score in mathematics and ELA for all student populations from 2015-2021. The largest statistically significant negative estimated effect for the 6th grade 3.18 points, meaning, students groups who transition in the 6th grade are associated with a -3.18-point difference in growth scores compared to students who do not transition. The smallest statistically significant negative estimated effect for 6th grade is 0.43 points. For 7th grade, our biggest statistically significant negative estimated effect is 2.97 points. The smallest statistically significant negative estimated effect for 7th grade is 0.72 points. There were no statistically significant positive estimated effects for student groups transitioning in the 6th and 7th grade.

Students who qualifying for free and reduced-price lunch, which we used as a proxy for poverty, experience lower grade-level value-added growth scores after a transition in 6th and 7th

grades compared to FRL students who did not transition. The majority of estimated negative effects in mathematics and ELA of FRL students who transition in the 6th grade are statistically significant at the 99% level of confidence. Likewise, FRL students who transition in the 7th grade have negative estimated effects in mathematics and ELA. Most estimated effects are statistically significant at the 95% and 99% level of confidence.

Limitations and Future Research

The main limitation to our research is the assumption that students in our non-transition group did not move to a new school. Since we were not examining student-level growth scores, we are unable to identify students who may have moved to a new school or were retained. Due to data availability, we were unable to include growth data from subjects other than mathematics and English language arts in our analyses. Additionally, our analysis is limited to the combined student population, white students, Black students, and FRL students. We were unable to include interactions between student groups such as white students who also qualify for free and reduced-price lunch. Another limitation is that we did not control for school-level characteristics, such as school size or enrollment demographics. While research does not indicate a relationship between these school characteristics and student growth, including them in an analysis might prove otherwise. Lastly, this study does not determine causality between grade-level growth and transitioning to a new school. Instead, our study focuses more broadly on trends that are seen form transitioning to a new school. While we cannot identify what aspects, if any, of a transition contribute to the difference in value-added growth scores, the findings are valuable for future research.

Since the state of Arkansas does not have specific requirements in place for when a school transition occurs, a unique opportunity presents itself for future comparison-based

research regarding transition years. Future studies could add to previous research by making comparisons between transitions years and student achievement by using individual student-level test scores. Future researchers could broaden our analysis by examining individual student-level growth, including student groups that we omitted, and focusing on school level characteristics. Lastly, a future study on transition years could examine student growth or achievement focusing on the number of schools that transition into one school. Small districts in Arkansas might have one elementary school, one middle school, and one high school, but the student groups remain consistent despite moving to a new building. Transitions in these districts might have a different relationship to student growth or achievement scores compared to students coming from larger districts where multiple elementary schools feed into multiple middle schools, and finally, one high school.

Policy Recommendations

Based on our findings, policymakers and school districts leaders should give careful consideration to the impact building transitions may have on student learning. While overall trends do not indicate substantial difference in value-added growth scores, students in 6th and 7th grade who transition to a new building demonstrate lower academic growth than their peers who do not transition. Arkansas leaders should suggest policies that could benefit students during a transition year, especially in the 6th and 7th grade. Based on our findings, we would recommend deploying an age appropriate and research-informed program to be implemented during schools that transition in the 6th and 7th grade that focuses on academic and social-emotional health of young adolescents. Examples of successful programs could provide activities that involve students, parents, teachers, counselors, and staff from the former and the transition school (Anfara & Schmid, 2007). The goals of these programs would be to encourage collaboration

among elementary and middle school teachers, students, and families, encourage school leaders to focus on concerns of middle level transitions, and to create a sustainable program that shows positive results over years. Policymakers could suggest program evaluations focusing on schools with positive value-added growth scores during transitions to see if best practices can be identified and replicated throughout the state.

Overall, results from our study show that student groups that transition schools in the 6th and 7th grades are associated with a negative estimated effects in grade-level value-added growth for both mathematics and English language arts. Even though this study does not provide causal inferences, it highlights consistent patterns between transition years and value-added growth. Bringing attention to the importance of transition years, especially in middle grades, could help reduce differences we found in grade-level value-added growth in the future.

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APPENDIX

Table A.1
Count of Arkansas Schools by Transition Grade, by Year, 2015 - 2021

	Grade Levels							
	3rd	4th	5th	6th	7th	8th	9th	10th
2015-16								
Transition	29	24	69	81	173	20	116	37
Non-Transition	460	456	400	273	161	300	201	260
Total	*489*	*480*	*469*	*354*	*334*	*320*	*317*	*297*
2016-17								
Transition	26	23	71	78	172	21	118	36
Non-Transition	461	460	384	271	147	296	184	256
Total	*487*	*483*	*455*	*349*	*319*	*317*	*302*	*292*
2017-18								
Transition	26	22	69	77	167	21	120	36
Non-Transition	461	461	385	274	155	301	189	266
Total	*487*	*483*	*454*	*351*	*322*	*322*	*309*	*302*
2018-19								
Transition	27	20	67	81	167	18	122	34
Non-Transition	459	460	391	270	157	304	188	268
Total	*486*	*480*	*458*	*351*	*324*	*322*	*310*	*302*
2020-21								
Transition	29	19	72	84	167	18	120	33
Non-Transition	456	460	375	270	157	302	190	268
Total	*485*	*479*	*447*	*354*	*324*	*320*	*310*	*301*

Note. The 2019-20 school year was not included in our analyses due lack of assessment data from the Covid-19 pandemic

Table A.2

Average Mathematics Growth Scores, by Grade and Transition Group, 2015-16

	Grade Levels							
	3rd	4th	5th	6th	7th	8th	9th	10th
All Students								
Transition	78.45	78.84	80.06	79.23	79.92	80.78	79.35	80.23
Non-Transition	80.20	80.15	79.98	80.46	80.03	79.87	80.71	79.89
Difference	*-1.75*	*-1.31*	*0.08*	*-1.23*	*-0.11*	*0.91*	*-1.36*	*0.34*
White Students								
Transition	78.54	79.78	80.27	79.98	80.09	81.32	80.50	80.64
Non-Transition	79.94	80.60	80.05	80.60	80.19	80.47	81.38	80.30
Difference	*-1.40*	*-0.82*	*0.22*	*-0.62*	*-0.10*	*0.85*	*-0.88*	*0.34*
Black Students								
Transition	76.67	76.44	78.57	76.50	79.20	76.90	76.76	78.39
Non-Transition	78.95	77.36	78.93	78.81	79.42	77.79	76.03	77.19
Difference	*-2.28*	*-0.92*	*-0.36*	*-2.31*	*-0.22*	*-0.89*	*0.73*	*1.20*
FRL Students								
Transition	77.73	77.92	79.66	78.41	79.21	79.26	78.46	79.51
Non-Transition	79.33	79.00	79.46	80.28	79.61	78.87	79.94	79.16
Difference	*-1.60*	*-1.08*	*0.20*	*-1.87*	*-0.40*	*0.39*	*-1.48*	*0.35*

Note. The difference is calculated by taking the transition year average growth score and subtracting the non-transition year growth score.

Table A.3

Average Mathematics Growth Scores, by Grade and Transition Group, 2016-17

	Grade Levels							
	3rd	4th	5th	6th	7th	8th	9th	10th
All Students								
Transition	78.15	79.81	79.61	79.14	79.82	80.70	80.14	80.18
Non-Transition	80.19	79.88	80.14	80.63	80.51	80.02	80.39	78.94
Difference	*-2.04*	*-0.07*	*-0.53*	*-1.49*	*-0.69*	*0.68*	*-0.25*	*1.24*
White Students								
Transition	77.70	80.15	79.69	79.55	80.32	80.59	80.35	80.36
Non-Transition	79.52	79.74	79.88	80.97	81.04	80.47	80.23	79.20
Difference	*-1.82*	*0.41*	*-0.19*	*-1.42*	*-0.72*	*0.12*	*0.12*	*1.16*
Black Students								
Transition	77.37	77.11	77.16	75.85	77.75	78.65	79.55	79.68
Non-Transition	78.11	77.52	77.38	77.68	79.08	77.59	79.33	78.07
Difference	*-0.74*	*-0.41*	*-0.22*	*-1.83*	*-1.33*	*1.06*	*0.22*	*1.61*
FRL Students								
Transition	77.49	79.11	78.74	78.35	78.56	80.20	79.87	79.81
Non-Transition	79.19	78.83	79.32	79.78	79.28	78.65	79.80	78.71
Difference	*-1.70*	*0.28*	*-0.58*	*-1.43*	*-0.72*	*1.55*	*0.07*	*1.10*

Note. The difference is calculated by taking the transition year average growth score and subtracting the non-transition year growth score.

Table A.4

Average Mathematics Growth Scores, by Grade and Transition Group, 2017-18

	Grade Levels							
	3rd	4th	5th	6th	7th	8th	9th	10th
All Students								
Transition	77.87	78.93	78.85	79.15	80.63	81.07	80.55	79.01
Non-Transition	80.13	79.97	80.02	80.36	80.18	80.13	80.29	79.47
Difference	*-2.26*	*-1.04*	*-1.17*	*-1.21*	*0.45*	*0.94*	*0.26*	*-0.46*
White Students								
Transition	77.19	79.11	77.87	79.61	81.11	81.50	80.95	79.11
Non-Transition	79.57	79.97	79.88	80.60	80.62	80.87	80.49	79.54
Difference	*-2.38*	*-0.86*	*-2.01*	*-0.99*	*0.49*	*0.63*	*0.46*	*-0.43*
Black Students								
Transition	78.78	76.43	77.24	75.60	78.26	77.68	78.71	79.88
Non-Transition	78.11	76.40	76.91	77.26	78.38	77.68	79.30	78.13
Difference	*0.67*	*0.03*	*0.33*	*-1.66*	*-0.12*	*0.00*	*-0.59*	*1.75*
FRL Students								
Transition	78.56	79.69	79.02	78.35	78.66	78.87	79.70	80.26
Non-Transition	79.44	78.83	79.33	80.03	79.04	78.93	79.53	78.72
Difference	*-0.88*	*0.86*	*-0.31*	*-1.68*	*-0.38*	*-0.06*	*0.17*	*1.54*

Note. The difference is calculated by taking the transition year average growth score and subtracting the non-transition year growth score.

Table A.5

Average Mathematics Growth Scores, by Grade and Transition Group, 2018-19

	Grade Levels							
	3rd	4th	5th	6th	7th	8th	9th	10th
All Students								
Transition	78.94	80.56	80.12	78.94	80.18	80.29	79.90	80.04
Non-Transition	80.26	79.88	79.87	80.87	79.83	79.96	80.40	79.06
Difference	*-1.32*	*0.68*	*0.25*	*-1.93*	*0.35*	*0.33*	*-0.50*	*0.98*
White Students								
Transition	78.79	80.79	79.93	80.01	80.45	80.69	80.39	80.44
Non-Transition	80.29	79.75	78.81	80.44	80.17	80.35	79.79	79.34
Difference	*-1.50*	*1.04*	*1.12*	*-0.43*	*0.28*	*0.34*	*0.60*	*1.10*
Black Students								
Transition	79.69	77.31	78.51	76.45	79.03	81.25	78.56	78.87
Non-Transition	78.53	76.60	77.11	78.10	77.64	77.44	78.41	77.89
Difference	*1.16*	*0.71*	*1.40*	*-1.65*	*1.39*	*3.81*	*0.15*	*0.98*
FRL Students								
Transition	78.56	80.13	78.98	78.28	78.91	79.51	79.42	79.67
Non-Transition	79.59	78.99	79.17	79.97	78.33	78.87	79.30	78.94
Difference	*-1.03*	*1.14*	*-0.19*	*-1.69*	*0.58*	*0.64*	*0.12*	*0.73*

Note. The difference is calculated by taking the transition year average growth score and subtracting the non-transition year growth score.

Table A.6

Average ELA Growth Scores, by Grade and Transition Group, 2015-16

	Grade Levels							
	3rd	4th	5th	6th	7th	8th	9th	10th
All Students								
Transition	79.63	78.33	79.29	79.37	79.17	80.52	79.79	81.36
Non-Transition	80.04	80.22	80.25	80.30	80.64	79.90	80.21	79.41
Difference	*-0.41*	*-1.89*	*-0.96*	*-0.93*	*-1.47*	*0.62*	*-0.42*	*1.95*
White Students								
Transition	79.85	78.94	79.54	79.70	79.69	80.85	80.29	82.15
Non-Transition	80.09	79.91	80.31	80.47	81.10	80.50	80.22	80.46
Difference	*-0.24*	*-0.97*	*-0.77*	*-0.77*	*-1.41*	*0.35*	*0.07*	*1.69*
Black Students								
Transition	79.12	77.50	77.06	76.37	76.69	75.38	78.69	78.21
Non-Transition	79.26	75.71	78.20	78.38	78.36	77.71	77.69	75.52
Difference	*-0.14*	*1.79*	*-1.14*	*-2.01*	*-1.67*	*-2.33*	*1.00*	*2.69*
FRL Students								
Transition	79.32	77.35	78.34	78.75	77.78	79.55	79.19	79.82
Non-Transition	79.74	79.45	76.65	79.99	79.76	78.99	79.90	78.21
Difference	*-0.42*	*-2.10*	*1.69*	*-1.24*	*-1.98*	*0.56*	*-0.71*	*1.61*

Note. The difference is calculated by taking the transition year average growth score and subtracting the non-transition year growth score.

Table A.7

Average ELA Growth Scores, by Grade and Transition Group, 2016-17

	Grade Levels							
	3rd	4th	5th	6th	7th	8th	9th	10th
All Students								
Transition	77.02	79.26	79.15	79.35	79.92	80.37	79.79	79.93
Non-Transition	80.34	80.00	80.38	80.61	80.41	80.04	80.61	79.03
Difference	*-3.32*	*-0.74*	*-1.23*	*-1.26*	*-0.49*	*0.33*	*-0.82*	*0.90*
White Students								
Transition	76.86	79.43	79.74	79.36	80.22	81.26	80.15	80.09
Non-Transition	80.17	80.02	79.91	80.66	80.79	80.25	80.57	79.50
Difference	*-3.31*	*-0.59*	*-0.17*	*-1.30*	*-0.57*	*1.01*	*-0.42*	*0.59*
Black Students								
Transition	75.91	76.53	75.02	76.50	78.13	76.75	78.79	79.28
Non-Transition	77.15	77.43	78.21	78.52	78.28	78.92	79.95	77.84
Difference	*-1.24*	*-0.90*	*-3.19*	*-2.02*	*-0.15*	*-2.17*	*-1.16*	*1.44*
FRL Students								
Transition	76.37	78.80	71.46	79.05	79.06	79.64	79.57	79.86
Non-Transition	79.58	79.23	80.51	80.11	79.57	79.19	79.99	79.04
Difference	*-3.21*	*-0.43*	*-9.05*	*-1.06*	*-0.51*	*0.45*	*-0.42*	*0.82*

Note. The difference is calculated by taking the transition year average growth score and subtracting the non-transition year growth score.

Table A.8

Average ELA Growth Scores, by Grade and Transition Group, 2017-18

	Grade Levels							
	3rd	4th	5th	6th	7th	8th	9th	10th
All Students								
Transition	77.85	80.15	80.45	79.48	80.12	81.78	79.42	80.41
Non-Transition	80.19	80.04	80.04	80.32	80.34	80.22	80.59	79.61
Difference	*-2.34*	*0.11*	*0.41*	*-0.84*	*-0.22*	*1.56*	*-1.17*	*0.80*
White Students								
Transition	77.00	79.55	80.91	79.53	80.08	82.26	79.73	80.78
Non-Transition	79.89	80.13	80.35	80.60	80.48	80.53	80.95	79.89
Difference	*-2.89*	*-0.58*	*0.56*	*-1.07*	*-0.40*	*1.73*	*-1.22*	*0.89*
Black Students								
Transition	74.94	76.15	75.58	77.36	78.55	77.81	78.75	79.53
Non-Transition	77.62	77.57	77.38	79.07	78.20	78.77	79.82	78.17
Difference	*-2.68*	*-1.42*	*-1.80*	*-1.71*	*0.35*	*-0.96*	*-1.07*	*1.36*
FRL Students								
Transition	77.46	78.39	69.49	78.79	79.39	79.86	79.91	80.26
Non-Transition	79.73	79.45	73.26	80.66	79.71	79.78	80.00	79.35
Difference	*-2.27*	*-1.06*	*-3.77*	*-1.87*	*-0.32*	*0.08*	*-0.09*	*0.91*

Note. The difference is calculated by taking the transition year average growth score and subtracting the non-transition year growth score.

Table A.9

Average ELA Growth Scores, by Grade and Transition Group, 2018-19

	Grade Levels							
	3rd	4th	5th	6th	7th	8th	9th	10th
All Students								
Transition	78.27	79.45	80.15	78.97	79.84	79.83	79.79	79.88
Non-Transition	80.17	80.01	79.94	80.93	80.05	80.05	80.53	79.07
Difference	*-1.90*	*-0.56*	*0.21*	*-1.96*	*-0.21*	*-0.22*	*-0.74*	*0.81*
White Students								
Transition	78.61	79.79	80.14	79.69	80.04	80.06	79.91	79.85
Non-Transition	80.28	80.24	78.83	80.00	80.04	79.87	79.64	79.30
Difference	*-1.67*	*-0.45*	*1.31*	*-0.31*	*0.00*	*0.19*	*0.27*	*0.55*
Black Students								
Transition	75.94	76.89	77.72	77.17	78.03	79.78	79.16	79.24
Non-Transition	77.04	77.60	77.86	79.65	77.48	78.63	79.05	77.94
Difference	*-1.10*	*-0.71*	*-0.14*	*-2.48*	*0.55*	*1.15*	*0.11*	*1.30*
FRL Students								
Transition	77.51	78.97	78.62	78.47	79.33	79.70	79.72	79.90
Non-Transition	79.32	79.00	78.24	80.59	79.27	79.58	79.85	78.83
Difference	*-1.81*	*-0.03*	*0.38*	*-2.12*	*0.06*	*0.12*	*-0.13*	*1.07*

Note. The difference is calculated by taking the transition year average growth score and subtracting the non-transition year growth score.

Table A.10

Estimated Effects of School Transition on Grade-Level Mathematics Value-Added Growth Scores, by Grade and Student Population, 2015-16

Grade Level	All Students	White Students	Black Students	FRL Students
3rd	-1.64*	-2.05*	-4.34**	-1.69*
4th	-1.37	-1.72	-2.94	-1.19
5th	0.613	1.36**	-0.80	0.33
6th	-2.08***	-2.03**	-3.18***	-1.63**
7th	-0.52**	-0.38	0.98	-0.43*
8th	0.55	0.55	1.26	-0.25
9th	-0.75	-0.54	-0.30	-1.13**
10th	0.56	0.57	1.66*	0.39

*** p<0.01, **p<0.05, *p<0.1

Table A.11

Estimated Effects of School Transition on Grade-Level Mathematics Value-Added Growth Scores, by Grade and Student Population, 2016-17

Grade Level	All Students	White Students	Black Students	FRL Students
3rd	-1.35	-0.90	-0.81	-1.34
4th	-0.31	-0.42	-1.25	0.03
5th	-0.05	-0.25	-1.13	-0.08
6th	-1.36**	-1.37*	-0.94	-1.20*
7th	-1.65***	-1.46**	-1.06	-2.09***
8th	1.32	1.51	2.38	1.48
9th	0.24	0.59	0.34	0.02
10th	0.70	0.85	0.91	0.45

*** p<0.01, **p<0.05, *p<0.1

Table A.12

Estimated Effects of School Transition on Grade-Level Mathematics Value-Added Growth Scores, by Grade and Student Population, 2017-18

Grade Level	All Students	White Students	Black Students	FRL Students
3rd	-1.97	-2.01	-2.20	-0.83
4th	-1.49	-1.85	2.68	1.13
5th	-1.69	-1.63	-0.06	-0.03
6th	0.53	0.44	-2.10*	-2.04***
7th	0.26	-0.15	-2.17**	-1.29**
8th	-0.92	-0.18	-1.79	-0.07
9th	0.10	0.40	0.21	0.11
10th	-0.56	-0.25	0.96	0.96*

*** p<0.01, **p<0.05, *p<0.1

Table A.13

Estimated Effects of School Transition on Grade-Level Mathematics Value-Added Growth Scores, by Grade and Student Population, 2018-19

Grade Level	All Students	White Students	Black Students	FRL Students
3rd	-1.05	-0.83	-0.04	-1.49
4th	1.19	0.76	2.90*	1.18
5th	0.69	0.57	1.06	0.35
6th	-1.60**	-1.62**	-0.77	-1.98***
7th	-1.15**	-1.72***	0.11	-0.66
8th	0.12	-0.27	1.28	0.04
9th	-0.57	-0.81	0.17	-0.71*
10th	0.64	0.57	2.46**	0.56

*** p<0.01, **p<0.05, *p<0.1

Table A.14

Estimated Effects of School Transition on Grade-Level ELA Value-Added Growth Scores, by Grade and Student Population, 2015-16

Grade Level	All Students	White Students	Black Students	FRL Students
3rd	-0.31	-0.46	-0.19	-0.25
4th	-2.21	-2.61*	-1.02	-2.09
5th	-0.48	-0.34	-0.21	-0.69
6th	-1.93***	-2.73***	-2.35*	-1.28**
7th	-2.74***	-2.51***	-0.76	-2.97***
8th	0.62	0.34	2.05	0.59
9th	-0.41*	0.20	0.22	-0.67*
10th	0.76	0.88	-1.22	-0.15

*** p<0.01, **p<0.05, *p<0.1

Table A.15

Estimated Effects of School Transition on Grade-Level ELA Value-Added Growth Scores, by Grade and Student Population, 2016-17

Grade Level	All Students	White Students	Black Students	FRL Students
3rd	-3.36***	-3.39**	-2.09	-3.47***
4th	-0.69	-0.40	-2.06	-0.46
5th	-1.09*	-0.48	-1.30	-1.33*
6th	-1.35**	-1.11*	-1.61	-1.33**
7th	-1.26***	-1.10**	-1.12	-1.54***
8th	0.72	1.51	-0.59	0.42
9th	-0.64*	-0.35	-0.66	-0.57
10th	0.16	-0.04	0.56	0.15

*** p<0.01, **p<0.05, *p<0.1

Table A.16

Estimated Effects of School Transition on Grade-Level ELA Value-Added Growth Scores, by Grade and Student Population, 2017-18

Grade Level	All Students	White Students	Black Students	FRL Students
3rd	-2.99**	-3.19*	-4.96***	-2.37**
4th	-0.72	-0.79	-3.35**	-1.12
5th	-0.63	0.53	-2.30**	-0.54
6th	-0.55	-0.94	-2.63***	-2.18***
7th	-0.11	-0.23	-1.17	-1.63***
8th	0.52	0.69	-2.12*	0.95
9th	-0.94**	0.68	-1.06*	-0.24
10th	0.29	0.56	0.73	0.37

*** p<0.01, **p<0.05, *p<0.1

Table A.17

Estimated Effects of School Transition on Grade-Level ELA Value-Added Growth Scores, by Grade and Student Population, 2018-19

Grade Level	All Students	White Students	Black Students	FRL Students
3rd	-1.66	-2.13*	-1.00	-1.69
4th	-0.85	-0.61	-3.67**	-0.85
5th	-0.33	-0.20	0.15	-0.54
6th	-2.05**	-2.36***	-1.96***	-2.38***
7th	-1.18***	-1.51***	-0.68	-1.24***
8th	0.20	-0.19	1.30	0.45
9th	-0.49	-0.49	-0.86	-0.60*
10th	0.36	0.08	0.84	0.95

*** p<0.01, **p<0.05, *p<0.1