

# Effects of School Setting on Fifth-Grade Student Outcomes

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## Executive Summary

Over four academic years, Metro Nashville Public Schools (MNPS) systemically moved fifth-grade students from the middle school setting to the elementary school setting through the ReimaginED Initiative. Over 6,000 students in 66 elementary schools moved to an elementary school for an additional year before transitioning to sixth grade in the middle school setting. This research project evaluates the first year of the ReimaginED Initiative to understand its impacts on student literacy and numeracy performance, social and emotional competencies, and enrollment trends.

This research uses a mixed methods approach to understand staff perspectives and to compare students who remained in MNPS elementary schools for fifth grade in the first cohort of the ReimaginED Initiative (the 2021-2022 academic year) to their peers.

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## Executive Summary continued...

We interviewed teachers and administrators and conducted multiple quantitative analyses including regression analysis and propensity score matching to determine the effect of the ReimaginED Initiative on student outcomes. We found that students in the first cohort of the ReimaginED Initiative outperformed their peers in literacy and math. Our qualitative analyses confirmed that school teachers and administrators are overwhelmingly positive about the social and emotional benefits of the elementary setting and the developmental support that an additional year in elementary school provides. Those findings are replicated, in part, in the quantitative data. Finally, students allowed to remain in elementary school for one additional year were less likely to transfer between their fourth and fifth-grade years.

Based on our findings, we recommend that MNPS:

- Establish a multi-faceted outreach strategy to improve perceptions of middle school.
- Create professional development opportunities for elementary and middle school teams to learn about and align educational approaches.
- Evaluate social-emotional learning practices and curricula currently being used across the district to identify best practices for implementation.
- Consider compensation implications for school leaders associated with moving fifth grade to elementary school.
- Plan a long-term research strategy to understand better the ReimaginED Initiative's impact across all four years of implementation.

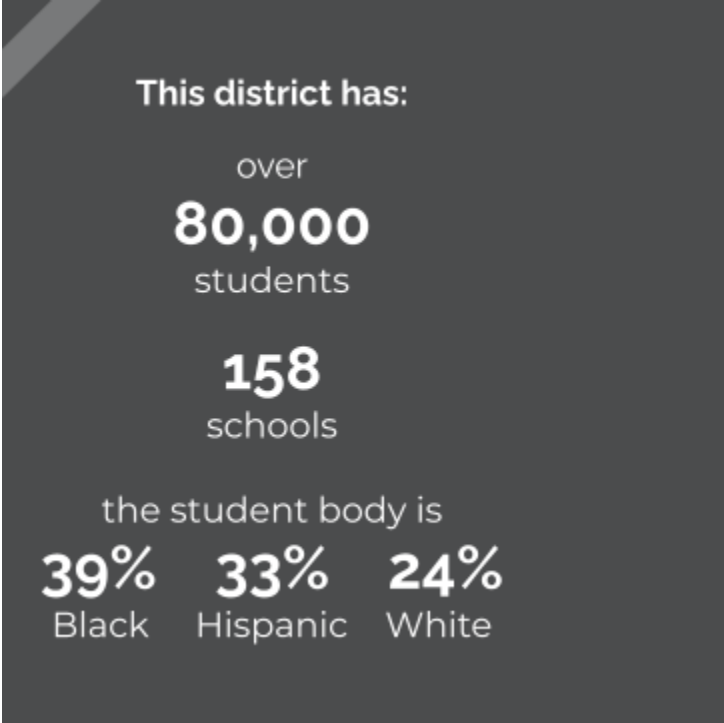
Additional research will be necessary to understand the full impact of the ReimaginED Initiative as the transition is scheduled to be finalized in the 2024-2025 school year. MNPS is home to a racially, linguistically, and socio-economically diverse population. The first group of students to transition did not represent the overall demographics of the school district; they were disproportionately students of color and low-income students with lower levels of prior academic performance. However, because of the employed methodological approach, this research could help other districts navigate the complexities of implementing system-wide structural shifts.

# Introduction and Context

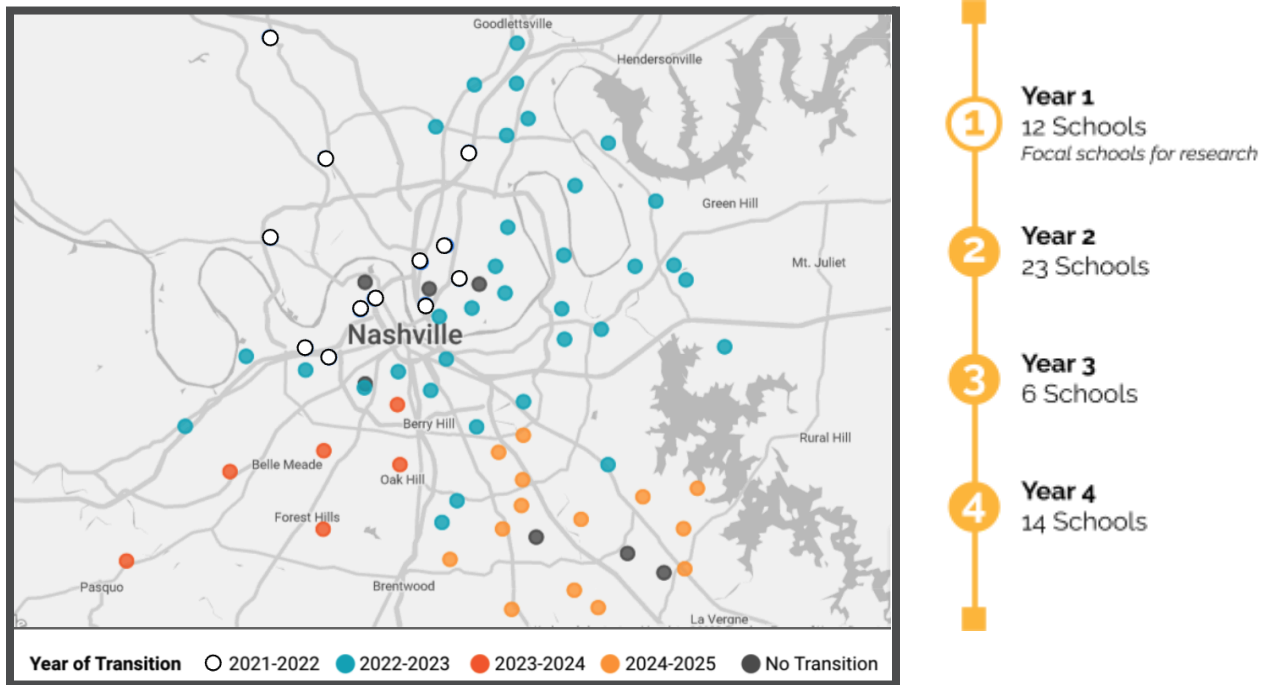
Metro Nashville Public Schools (MNPS) reconfigured grade-level assignments in elementary and middle schools through the ReimaginED Initiative. This change started in the 2021-2022 school year. It was motivated by data showing that “5th-grade students who remain in the elementary setting outperform their peers who are in a middle school setting,” a desire to improve curricular alignment between grade levels, and the desires of parents to have fifth grade situated in elementary school (MNPS, n.d.c). Traditionally, students in MNPS attended elementary school for Kindergarten through fourth grade and middle school for fifth through eighth grade. MNPS began moving students in fifth grade (approximately 6,000 students in 66 schools) from the middle to the elementary school setting as part of the ReimaginED Initiative (MNPS, n.d.c). This grade configuration change was intended to increase academic, behavioral, and social-emotional outcomes and reduce external transfers.

## Organizational Context

MNPS is a large southern urban district serving over 80,000 students across 158 schools, with 70 elementary (including four special setting elementary schools) and 29 middle schools (MNPS, n.d.f). Almost 39% percent of MNPS students identify as Black, 33% as Hispanic, 24% as White, and around 4% as another racial group. Students come from 148 countries and speak 141 languages (MNPS, n.d.f). MNPS grounds its work in its vision statement: “Metro Nashville Public Schools will be established as the premier large school district in Tennessee and beyond by ensuring that every student is known” (MNPS, n.d.b). The ReimaginED Initiative was rolled out over four years. The timeline for which schools would transition was based on several contextual factors, such as school clusters, student population levels, and capital project initiatives to accommodate the population shifts in buildings (MNPS, n.d.c). MNPS will finalize the transition of all fifth-grade students to elementary settings in the 2024-2025 school year (see [Figure 1](#) and [Appendix A](#)).



**Figure 1**  
 Map of School Transition Timeline



**ReimaginED  
 Cohort 1 Schools**

**569**  
 students

**12**  
 schools

the student body is

**70%** Black   **19%** Hispanic   **10%** White

**What is the problem?**

Traditionally, students go to middle school for 5th grade.

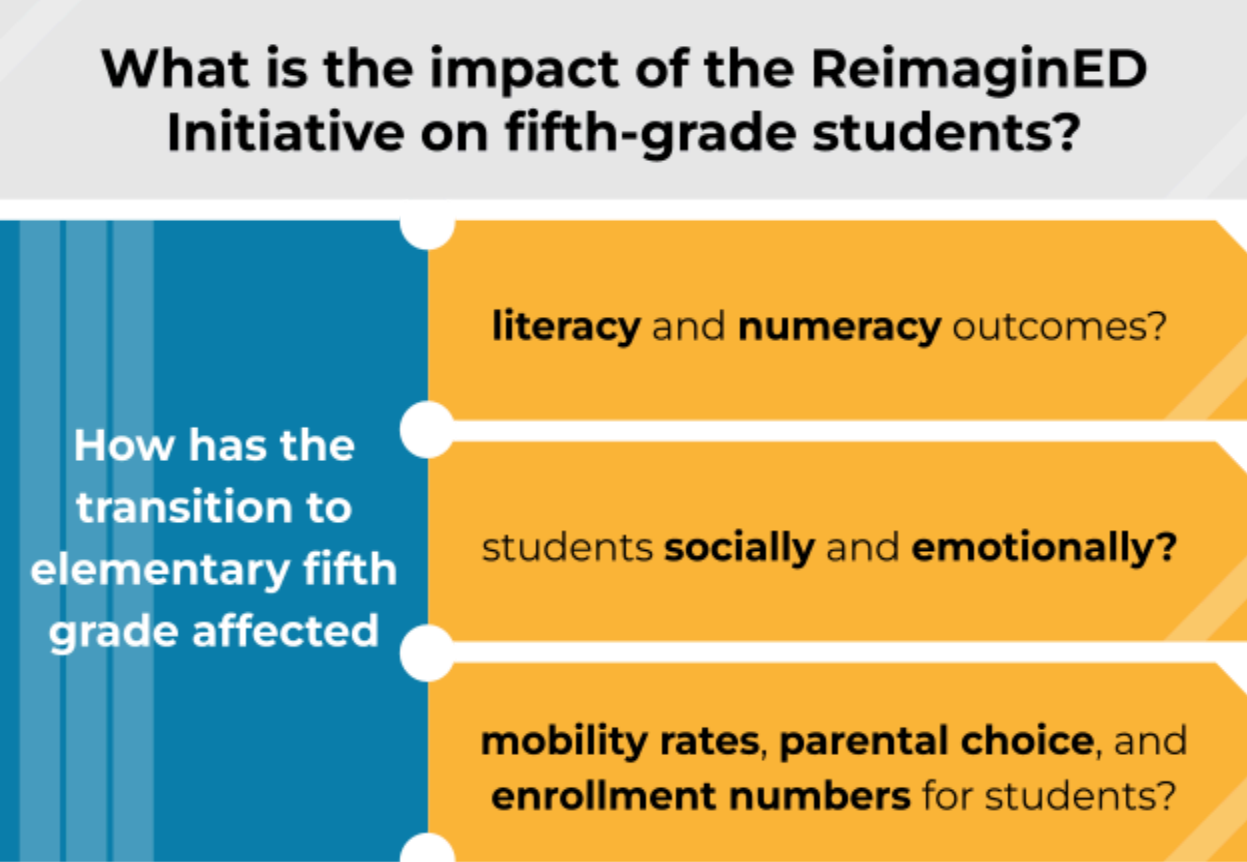
“MNPS data shows 5th-grade students who remain in the elementary setting outperform their peers who are in a middle school setting” (MNPS, n.d.c).

The decision was made to move students in 5th grade from middle schools to elementary schools.

This was named the **ReimaginED Initiative** and schools transitions over four academic years starting in the **2021-2022 school year.**

# Project Questions & Purpose

The ReimaginED Initiative represents a substantial change to the structure and experiences of MNPS students who attend elementary and middle schools. The three goals of this organizational shift are to improve academic performance, improve social-emotional well-being (including attendance and behavior), and reduce the number of transfers out of the school system. To investigate these goals, the following guiding questions shaped our inquiry:



MNPS assumes that serving fifth-grade students in the elementary setting will lead to persistently improved English and math outcomes, reduced challenging behavioral events, decreased absences, and increased social-emotional well-being. This change in setting will also reduce or delay the number of fourth-grade students in MNPS who transfer out of the district before starting their fifth-grade year.





## Literature Review

A complex social and political history brought Nashville and MNPS to this transition point. The extant literature informs this project and highlights that significant structural differences between elementary and middle school settings affect academic performance, student behavior, social-emotional competencies, and enrollment decisions by parents. The literature grounds the work of this capstone project in the current social and historical context and provides a strong foundation upon which we conduct qualitative and quantitative inquiry.

### Social and Political Context

The 20th century was marked by educators grappling with the development of an educational system designed to meet the existing and emerging needs of young people in our country. Many mechanisms have been proposed to design educational systems most efficiently. Schools transitioned from segregated semi-public institutions serving the common good of local communities (Reese, 2013) to more desegregated and student-centric, parental choice-based models like magnet schools, charter schools, and vouchers for private schools (Horsford et al., 2019). These shifts brought many changes to the structure of schools in the United States. What is now viewed as commonplace, middle schools did not emerge until the 1900s (Goldin, 1999). The first iterations of junior high school launched in Columbus, OH and Berkley, CA in 1909 (Goldin, 1999). Subsequently, elementary and senior high schools shifted their structure to make room for junior high school, adjusting the number of years students spent with them (Goldin, 1999). Goldin (1999) wrote that the eight-four (eight years of elementary school with four years of optional high school) system transitioned to a six-three-three system (six years of elementary school, three years of junior high, and three years of senior high school). Multiple models have been adopted over the past century and “some districts returned to the previous model, whereas others eliminated the junior high school and introduced the middle school,



encompassing grades 5 to 8” (Goldin, 1999, pp. 4-5). In today’s public educational landscape, the K-5 grade elementary school, 6-8 grade middle school, and 9-12 grade high school model are most prevalent but there are numerous examples of other models. Fundamentally, schools are shaped by their local political and social contexts.

In recent history, Nashville schools have undergone multiple large structural shifts, many seeking to bring about desegregation. Nashville experienced the magnet school movement of the 2000s (Hubbard, 2011), the charter school movement of the 2010s, and the private-school voucher movement of the 2020s (Strauss, 2019). School type impacts student achievement (Araujo & Archie, 2016). Schools in Nashville have also gone through significant consolidation in addition to other school option movements, resulting in the current configuration of MNPS. In her book cataloging how race and place intersect in the history of Nashville’s schools, Ansley Erickson (2016) notes that previous consolidation movements were not motivated by desegregation but to dampen the impact of departures from the district. Restructuring the school district to absorb nearby county schools did not stop all departures from the district. In Nashville, “private school attendance [...] boomed at each point at which desegregation expanded” (Erickson, 2016, p. 5). The history of Nashville reveals that school structures and organizations are subject to change. This initiative will dramatically shift the structure in which students experience fifth grade.

## **Structural Differences Between Elementary and Middle Schools**

There are significant differences between the elementary and middle school settings. Cook and colleagues (2008) write about the physical movement of students in middle school compared to elementary school. In middle school, students transition from class to class, whereas in



elementary school, students primarily have one teacher for most of the day (Cook et al., 2008). We expect to see this same shift in MNPS. Students who experience fifth grade in middle school will move across the building from classroom to classroom. In contrast, students who experience fifth grade in elementary school will have more limited movement. This will be a tremendous shift not only for

students but for their teachers as well. Teaching in the middle school setting requires more specialization in content areas, while teaching in an elementary school setting requires teachers to tackle a broad range of topics.

The MNPS plan to move fifth grade to middle school is the most recent attempt by educational and community leaders to shape the educational landscape for the benefit of MNPS students. Consistent with the extant educational research on how school transitions impact young people, this transition aimed to provide more targeting programming, increased enrollment, more efficient use of buildings, and improved climate and culture (MNPS, n.d.c). Specifically, this plan is intended to improve student academic achievement, improve social and emotional competencies such as attendance and behavior, and promote better transitions within the MNPS system (MNPS, n.d.d).

## Academics and Behavior

Some academic and discipline research suggests the benefits of keeping students in elementary school (Cook et al., 2008; Rockoff & Lockwood, 2010). Studying students in New York City, Rockoff and Lockwood (2010) describe the detrimental academic outcomes for math and English associated with moving students out of elementary schools. The researchers found that these outcomes impacted both male and female students and persisted for years (Rockoff & Lockwood, 2010). Although the middle school model was implemented to support the unique educational needs of students, its academic benefits are now being questioned.



Moreover, middle school is a time of increased disciplinary trouble (Cook et al., 2008; Theriot & Dupper, 2010). Cook and colleagues (2008) found that sixth graders in North Carolina attending middle schools are substantially more likely to have disciplinary trouble than sixth graders attending elementary school. These findings are aligned with the work of Theriot and Dupper (2010), who compared discipline records for fifth-grade elementary school students to sixth-grade middle school students in a district in the southeastern United States. They found, “Only 8% of all 5th graders were written up at least once for an

infraction while 26% of all 6th graders were written up at least once for an infraction during the study period” (Theriot & Dupper, 2010, p. 215). Their research compared subjective reasons for disciplinary infractions (class disturbance, for example) and objective reasons (fighting, for example) and found increases across both infraction types (Theriot & Dupper, 2010). Researchers offer exposure to older peers, the movement between classes throughout the school day, and the developmental period for students as contributing factors to the observed discipline differences (Cook et al., 2008). Strong relationships with peers and teachers and school engagement have been considered an antidote to increased discipline issues.

## Social Emotional Learning (SEL)

The Collaborative for Academic, Social, and Emotional Learning (CASEL), a well-respected organization promoting SEL competencies for youth, defines SEL as the process by which people “acquire and apply the knowledge, skills, and attitudes to develop healthy identities, manage emotions and achieve personal and collective goals, feel and show empathy for others, establish and maintain



supportive relationships, and make responsible and caring decisions” (CASEL, 2023, para. 1). Parents, students, and school counselors express concerns about a wide range of SEL competencies in the K-12 system (Spies, 2014). Spies (2014) found that students were concerned about time management, self-advocacy, organization, resilience, and an open mindset

during transitions to middle school. Coelho and colleagues (2017) found that “students report lower levels of academic, emotional and physical self-concept as well as lower levels of self-esteem” during the middle school transition from fourth to fifth grade in Portugal (p. 564). There are many hypotheses about what influences these shifts in self-concept and self-esteem and how moving from elementary to middle school plays a role.

The middle school years span a developmentally difficult period for young people and school districts may struggle to adequately meet their students' needs (Carolan et al., 2015). These developmental difficulties are known to students. Lovette-Wilson and colleagues (2022) wrote about the physical development of

students and how it impacted some in their move to middle school; “the students who felt worried about older and larger students were physically small in comparison to those who did not share concerns about older and taller students on campus, suggesting that this may not be an issue for all students” (pp. 434-436). Carolan and colleagues (2015) find that the environmental changes of middle school “coupled with the normal course of adolescent development, result in a developmental mismatch between the needs of adolescents and the school environment” (p. 594). Finally, Holas and Huston (2012) considered school engagement. They found that the physical size of middle schools impacted students’ engagement: “The larger size of middle schools was related to students’ lower sense of engagement with school” (Holas & Huston, 2012, p. 343). These are the challenging considerations that school districts must grapple with when shaping the educational landscape for the benefit of students.

## Looking Beyond Tennessee

Middle schools have long been a work in progress. Weiss and Kipnes (2006) write that “despite numerous modifications, rarely has there been widespread or consistent satisfaction with the forms of middle grades schooling” (p. 240). It is important to consider what other districts, states, and



countries have tried to support students in the middle school years. Portugal and Indianapolis offer two comparison points relevant to the MNPS fifth-grade transition to middle school. The Portuguese educational system transitions students to a middle school structure at the end of fourth grade. Research has been conducted about the social-emotional outcomes for students and found decreases in students’ self-concept at the end of the year (fifth grade) following the transition. Our research in MNPS will compare how students fared (academically and socially) when they transitioned at the end of fourth grade versus how they fared when they transitioned at the end of fifth grade.

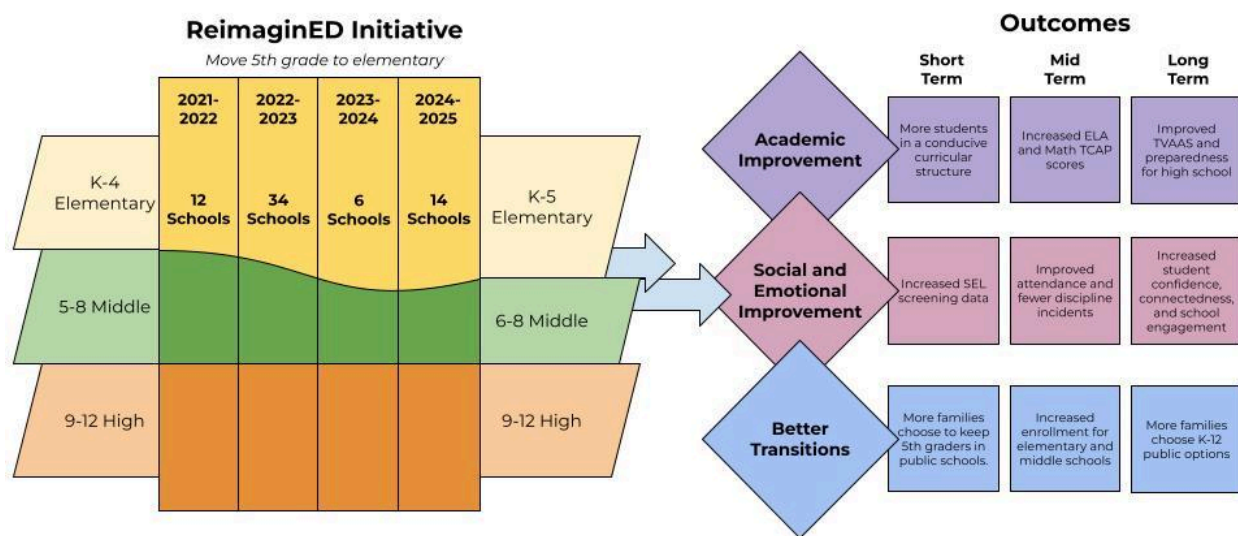
In addition, Indianapolis Public Schools (IPS) offers a timely case study of shifting the educational landscape. While they are a significantly smaller school district than MNPS and located in a different part of the country, they similarly transitioned many fifth-graders recently. The IPS superintendent shared, “Basically, this allows us to ... just maximize that student enrollment to create a more robust experience for our students academically and from an enrichment

standpoint as well” (Weddle, 2022, para. 14). IPS balances enrollment considerations with the student experience. This delicate balance is highlighted by Carolan and colleagues (2015) who caution that school and district leaders should consider developmental needs, instructional practices, and classroom strategies in the middle school years, not just during large structural shifts. MNPS is implementing the ReimaginED Initiative over a four-year period of time. The students most impacted by the initiative are in the middle of a key developmental period. What is missing from the extant research is how a significant structural shift may shape the academic, social-emotional, and transition outcomes in both the short and long term for students in a large southern urban school district like MNPS.

## Conceptual Framework

Our research endeavors to fill the gap in the literature. We developed a logic model based on the goals of the ReimaginED Initiative (modeled after the work of Knowlton & Phillips, 2012), which outlines the theory of change and intended outcomes. This logic model (Figure 2) shows students' movement (as represented by schools) by year and proposes the short-term, mid-term, and long-term outcomes extrapolated from publicly available information (MNPS, n.d.d).

**Figure 2**  
*Logic Model*



Note. This model captures the multi-year organizational change and the intended outcomes over time.

# Design

Our research focused on the short-term academic, social emotional, and transition outcomes for the 12 schools that transitioned during the 2021-2022 school year. The study employed a mixed methods approach with a parallel convergent design. For the quantitative analysis, we compared students who remained in an elementary setting for fifth grade during the 2021-2022 school year to their peers who matriculated to a middle school for fifth grade. These students who remained in an elementary setting were defined as our treatment group. This study focused on students' experiences in the first 12 elementary schools that made the fifth-grade transition– referred to as “ReimaginED Cohort 1 students.” We refer to the 12 schools that transitioned in year one of the ReimaginED Initiative as “ReimaginED Cohort 1 schools” ([Appendix A](#)). The term “traditional schools” is used in this research to reference elementary and middle schools that did not transition in ReimaginED Cohort 1, even though they are scheduled to transition in later years. MNPS offers multiple middle school options that require an enrollment application. We call these schools “application schools” throughout this report. We also compared students who transitioned away from MNPS following fourth grade to students who remained in the district. These students are labeled “transferred” and “remained,” respectively. ReimaginED Cohort 1 students were identified in fourth and sixth grades to gather pre- and post-data. Our study estimates the impact of the ReimaginED Initiative on three domains: student academic achievement, student social-emotional outcomes, and student enrollment.

## Qualitative

We conducted interviews with five administrators and four teachers after planning for interviews with six administrators and 12 teachers. The volume of interviews was set to ensure a wide range of perspectives and shaped the scope and limitations of this project. These staff members were recruited from the ReimaginED Cohort 1 schools (outlined in [Appendix A](#)). We used a randomizer to select school administrators as potential subjects. Potential interviewees were emailed a description of the project and an invitation to be interviewed. Interviewed administrators were asked to identify two to three teachers or staff members from their school to be interviewed. The same interview



**30-45 min.**  
interviews with

**5**  
administrators

**4**  
teachers

findings organized in a  
concept-clustered matrix

protocol was used with school administrators, teachers, and staff members (see [Appendix B](#)). The interviews helped us better understand how these staff members perceived the ReimaginED Initiative and its impact on academics, social-emotional learning, and transitions. Interviews were conducted at the school of the interviewee or virtually and took approximately 30 to 45 minutes.

Following the completion of interviews with administrators and staff, each interviewer developed an interim analysis report detailing a description of the interview, interview protocol challenges, initial thoughts regarding themes, and areas for further inquiry. The research team met to conduct a short verbal debrief to compare and contrast the completed interviews. We discussed how question order and structure had to be



modified based on the responses or questions of the administrators and teachers to ensure the protocol was being followed consistently between interviewers. Following the debriefing out of the field, we conducted an initial listening tour to gain familiarity with the interviews. We identified major themes and common patterns and the relationship between responses using a combination of open and axial coding (Patton, 2002) and organized findings in a concept-clustered matrix. Emergent themes were organized by our research questions and compared to observations from our quantitative data. Major themes or common patterns not aligned with our research questions were grouped and given a categorical distinction. We identified overlapping and contrasting concepts between the sites and position levels.

We listened a third time to finalize the concept-clustered combined matrix by extracting specific, relevant, and illustrative quotes aligned with the identified themes. Between each listen of the interviews, we gave ourselves time to think and reflect on the responses of the administrators and educators. We developed a final concept-clustered matrix to compare themes and quotes from each site. Through this data analysis process, we identified additional domains in need of description or subcategorization. We completed a site dynamics matrix based on interviews and documents describing the organizational structures.



## Quantitative

Through a data-sharing agreement with the district, we received a sample of over 80,000 rows of student-level data for every fourth, fifth, and sixth-grader

**80,000+**  
rows of student-level data for  
**4th, 5th, & 6th**  
grader enrolled between the  
**2018 - 2023**  
school years  
dataset includes student  
**achievement,**  
**behavioral, school**  
**climate, &**  
**enrollment**  
outcomes

enrolled in MNPS between the 2017-2018 school year and the 2022-2023 school year. We focused our analysis on the 4,265 fifth graders enrolled in MNPS during the 2021-2022 school year. This data contained demographic, student achievement, behavioral, and enrollment variables. Demographic data include gender, special education status, race, and English language learner status from which we created binary variables. Student achievement data include end-of-year English Language Arts (ELA) and math outcomes data available in the form of a percentile score calculated for each subject area within a grade level for each year. This data was provided in percentile form from the Tennessee Comprehensive Assessment Program (TCAP), a statewide standardized test. We excluded

students without an ELA or math score in both the fourth and fifth grades. Behavioral data include the number of unexcused absences, the number of out-of-school suspension (OSS) days, and Panorama School Climate Survey student responses.<sup>1</sup> Enrollment data include school enrollment counts by grade level and transfer information. We downloaded publicly available datasets and joined them with the MNPS-provided data to incorporate Free and Reduced Lunch (an indicator of economic disadvantage) percentages, overall school size, geographic data, staffing ratios, and other school characteristics.

**4,265**  
5th graders  
in focus year

This data was cleaned to ensure consistent terminology and structure between years. We aggregated student-level data at the school level. For behavioral data, we created measures showing the percentage of students with more than five days of unexcused absences, more than one day of unexcused absences, any days of OSS, and any in-year transfers. In-year transfers are used as a measure of student transience. When evaluating student-level data, we limited our analysis to students who were enrolled more than 90 days of the school year because we could not be confident that we could

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<sup>1</sup> Panorama School Climate Survey student responses were only available as fifth and sixth-grade outcomes for ReimaginED Cohort 1 students due to changes in its administration schedule.

attribute observed outcomes to the school setting or treatment. We grouped potential fourth-grade settings into four categories: traditional middle school, ReimaginED Cohort 1 school, application middle school, or transferred out of the district.

## Methods

Our regression analysis accounted for prior 4th-grade academic performance on these tests and beginning on the year benchmark data for both ELA and math. This means that students without academic data from a prior school year were excluded from our analysis.

Using a chi-square test of independence, we compared the count of students enrolled in fourth-grade settings during the 2020-2021 school year who did not transfer to fourth-grade students who left the district before their fifth and sixth-grade years. In the findings section, we provide a complete analysis of the differences between these students. Using *t*-tests, we compared demographic descriptors, student achievement outcomes, behavioral outcomes, and enrollment counts of ReimaginED Cohort 1 students to students in traditional settings.

We compared fourth-grade descriptive and outcome data to test the differences between ReimaginED Cohort 1 schools and those not in the group. Next, we conducted regression analysis on fifth-grade students in ReimaginED Cohort 1, accounting for



prior academic performance to account for the student pre-trends, student characteristics, and school-fixed effects to capture time-invariant school characteristics. We ran a second model for fourth through sixth-grade students in ReimaginED Cohort 1, using the same variables but absorbing the year in order to account for year-over-year shocks in our outcome measures. We use heteroskedasticity-robust standard errors in our analysis. In the interpretation of results, we report significance at  $p < .05$ .

The ReimaginED Initiative is a nonrandomized trial. We found a significant difference between students who transferred out of district and those who remained in district. We also found significant differences between students enrolled in ReimaginED Cohort 1 and students in traditional settings. Because of these factors, we employed propensity score matching (PSM) to identify a statistically comparable comparison group for the ReimaginED treatment group. PSM is a quasi-experimental design method first proposed by Rosenbaum and Rubin (1983) to attenuate bias resulting from differences across treatment and

**Model 1:  
Regression**

*Linear regression comparing 5th grade outcomes between ReimaginED and traditional schools. Accounted for student characteristics, school characteristics, and prior performance.*

**Model 2:  
Propensity Score Matching (PSM)**

*Schools were matched on descriptive characteristics and students were matched within schools across demographic and outcome data. We calculated the Average Treatment Effect of the ReimaginED Initiative on students.*

control groups. This method matches similar subjects and relies upon the ignorability-of-treatment assumption to estimate the Average Treatment Effect (ATE) (Morgan & Winship, 2015; Rosenbaum & Rubin, 1983; Wooldridge, 2002). We employed a two-stage matching process by first matching schools and then matching students within schools using a logit model similar to the method used by McCormick and colleagues (2013) and described by Rossi, Lipsey, and Henry (2019). In the first stage, we estimate the probability of a school being selected for inclusion in the first year of the ReimaginED Initiative as a function of

average ELA percentile score; average math percentile score; economically disadvantaged (ED) percentage; Black, Hispanic, or Indigenous percentage; and the percent of the school with more than five unexcused absences. This probability is our propensity score. Using the school-level probabilities from the first stage, we identify a set of comparison schools that are similar along the matching covariates.

In the second stage, we identified students in the matched comparison schools that were similar to students in ReimaginED elementary schools in the fourth grade. We used the following covariates to match students: school propensity score, Black, Hispanic, or Indigenous status, special education status, English Language Learner status, and count of unexcused absences. When estimating ELA or math outcomes, we included ELA percentile or math percentile, respectively, as matching covariates.

We used propensity score matching. Students were matched with replacement to reduce overall bias, meaning the same student may be used as a comparison unit for multiple treated students. We do this primarily out of necessity; given the treated schools and their students differ significantly from control schools and students, it would not be possible to identify different control units for each treated unit. We allowed the model to specify the caliper. Once we identified a statistically similar matched sample, we estimated the difference in outcomes between students in ReimaginED elementary schools and the matched sample who matriculated to middle schools. Specifically, the estimate on the treatment variable is the difference in outcomes between treated and control students, controlling for the covariates used in our PSM model.

At both levels, we examined histograms and minimized bias prior to running models on fourth and fifth-grade outcomes ([Appendix C](#)). These tests demonstrated sufficient overlap between treatment and control groups to satisfy the common support assumption. We accounted for both school and student-level propensity scores when determining the ATE. Essentially, this multilevel propensity score matching method identifies subjects within schools with a similar likelihood of participating in the treatment and compares the outcomes of those who received treatment and those who did not to determine the effect of treatment on students who spent their fifth-grade year in an elementary school.

## Limitations

We assessed reliability and validity (both internal and external) to determine the limitations of our work. We worked to reduce threats to internal reliability by recording our interviews using Otter.ai with the consent of our interviewees. We tested interview questions with similarly positioned individuals not associated with the district to ensure that questions were clear and understandable and would generate a response focused on our research questions. To mitigate any threats to external reliability, we conducted interviews at times and in convenient locations for the interviewees; for some, this was during the school day, and for others, it was during evening hours.

We contacted school administrators in the ReimaginED Cohort 1 schools to request interviews and to help identify and recruit teacher interviewees. A potential threat to internal validity was selection bias in the way we requested teacher names from interviewed school administrators using a non-random interview sampling technique. In addition, our research team planned to conduct focus groups with affected parents in the district to better understand how they

perceive the ReimaginED initiative and its impact on families but we were not successful in our attempts to schedule these interviews.<sup>2</sup>

Our quantitative approach had several limitations based on the tests that were implemented. *T*-tests are basic means comparisons without considering endogenous selection bias, confounding factors, and survivorship bias. These tests were used to establish a naive estimate of differences between groups. We include overall descriptive data in addition to testing between transferred and remained students and between treatment and control groups to account for each of these in part. Additionally, it may be that students differ by characteristics we do not observe.

Additionally, there may be unobservable or omitted variable bias in our regression analysis. We selected variables based on our literature review and what was available but we could have missed some other factors that could have improved our model. We attempted to account for this by using models which account for school characteristics, absorbing for year, and accounting for the



heteroskedasticity of the data. We present a summary of the differences in the transfer and treatment populations in our findings below. We accounted for past performance in the outcome variable of interest, when possible, and student characteristics.

Finally, PSM has many limitations. King and Nielsen (2019) offer a general critique, highlighting that the human

choice required for preprocessing data to determine matches introduces bias that can imbalance findings. As King and Nielsen (2019) discuss, there is no alternative for a randomized control trial and the attempts to approximate randomization present a challenge to evaluation and interpretation of results. We have worked to mitigate these concerns by offering comprehensive comparisons of groups within our sample and by running robust regression models prior to PSM. We matched schools and then removed those for which there was no common support ([Appendix D](#)). PSM is a challenge when exact matches cannot be found to match all participants (Rossi et al., 2019). We stratified schools based

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<sup>2</sup> Each focus group was to have four or five parents each, recruited through key informants at MNPS Family Information Centers, and was going to take place at Family Information Centers or public meeting spaces. Despite multiple attempted contacts, we were unable to conduct the planned focus group interviews. Two were scheduled for late January but, of those, one was canceled and one had low attendance due to inclement weather just before our on-site research trip.

on their propensity for treatment selection similar to a coarsened exact matching approach described by Blackwell and colleagues (2009) and Rossi, Lipsey, and Henry (2019). We provided an interpretation of results through the lens of the limitations of PSM, acknowledging that the students we compared are not representative of the majority of students who will transition later in the ReimaginED Initiative. We do not claim the generalizability of the treatment effect to all students. We avoided methods that duplicate individual observations, preferring a smaller, more closely matched sample instead of a sample that requires additional weighting of covariates. The fundamental imbalance within our treatment group and comparison group supports our decision to use PSM, as described by King and Nielsen (2019) in their “Advice for PSM Users” (p. 15). This method was used because this is an early study of a program that will eventually include all students in the grade range of focus within the district.



## Key Findings

Our study investigated the effect of the elementary school setting on fifth-grade students. The results of this evaluation considered that the schools selected to transition during the first year of the ReimaginED Initiative are significantly different across multiple domains from those schools that transitioned in the following three years. We described additional limitations in the preceding section. We first describe these differences in detail, and then present findings for our core research questions. We also explore adjacent themes that emerged during interviews with administrators and educators.

### ReimaginED Cohort 1 Schools are Different Than Traditional Schools

Before the transition and during the first year of transition, ReimaginED Cohort 1 schools had fewer students, more economically disadvantaged students, and lower student-to-administrator and teacher ratios ([Appendix E](#)) than other elementary schools in the district. The ReimaginED Initiative caused a stark change to the organization of elementary and middle schools. Across the district, the ReimaginED Initiative reduced the size of middle schools and increased the size of elementary schools while maintaining similar student-to-teacher ratios ([Table 1](#)). This change means that elementary school administrators became accountable for more students and staff while middle schools decreased in total

enrollment and staffing. ReimaginED Cohort 1 school administrator ratios were below the overall district ratio ([Table 1](#)).

**Table 1**  
*MNPS School Characteristics*

	2017-18	2018-19	2019-20	2020-21	<i>First Year of Treatment</i> 2021-22
<i>Administrator Ratio</i>					
Cohort 1 Elementary Schools	240	202	158	127	174
Cohort 1 Middle Schools	112	122	122	117	84
Whole District	246	244	226	207	201
<i>Teacher Ratio</i>					
Cohort 1 Elementary Schools	14	12	12	10	11
Cohort 1 Middle Schools	18	15	13	12	11
Whole District	16	14	14	13	13
<i>Economically Disadvantaged</i>					
Cohort 1 Elementary Schools	71.1%	70.4%	65.4%	68.1%	65.8%
Cohort 1 Middle Schools	76.9%	75.6%	76.5%	75.2%	69.7%
Whole District	46.9%	44.3%	39.7%	41.2%	35.0%
<i>Average School Size</i>					
Cohort 1 Elementary Schools	299	280	265	254	304
Cohort 1 Middle Schools	308	2734	274	380	275
Whole District	516	511	514	508	500

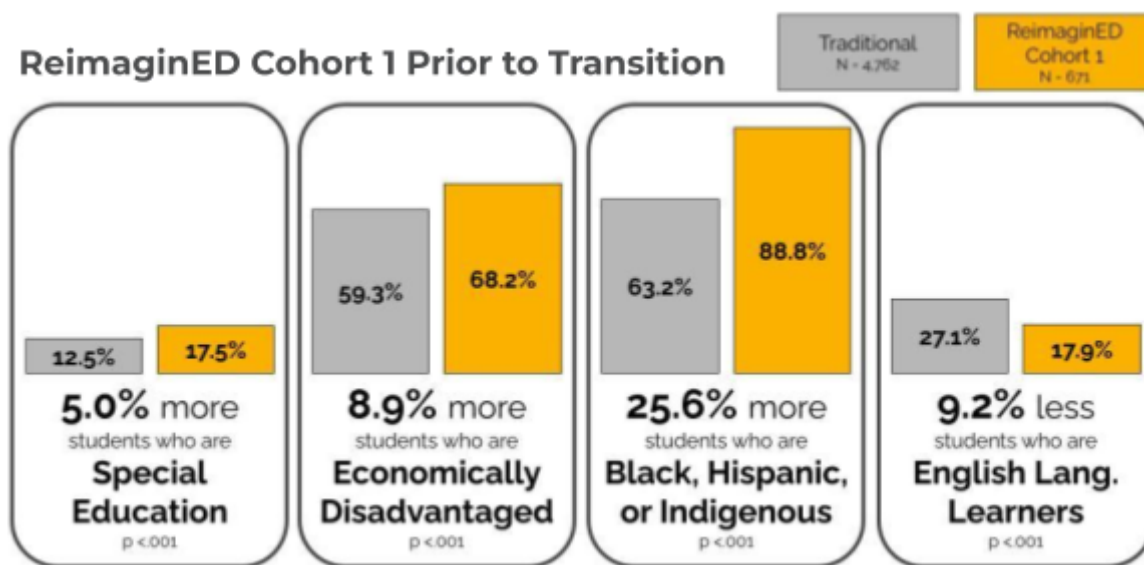
*Note.* Cohort 1 Middle Schools are the schools that formerly had a fifth grade. This grade level is now located in ReimaginED Cohort 1 schools. Administrator and teacher ratios are calculated as the count of students divided by the count of staff, rounded to the nearest whole number. Calculated from the Tennessee Department of Education (TDOE) Data downloads. ED is calculated as the product of the Percent ED at the school level times and the count of students divided by the total count of students. Calculated from the TDOE Data downloads (TDOE, n.d.).

ReimaginED Cohort 1 schools were different across a number of school-level descriptive, behavioral, and academic domains ([Table 2](#)). ReimaginED Cohort 1 schools have statistically significant higher rates of fourth-grade students receiving special education services ( $p = .049$ ) and higher percentages of students of color ( $p = .002$ ) than traditional schools. Behaviorally, a greater percentage of students in the ReimaginED Cohort 1 schools have any unexcused absences ( $p = .001$ ) and OSS days ( $p = .029$ ). These schools also have lower beginning-of-year benchmark and end-of-year standardized testing data in both reading ( $p = .002$ ) and math ( $p < .001$ ). These statistically significant differences are also observed at the student level ([Appendix F](#)). These large differences justify our use of propensity score matching.

*continued on page 25*



## ReimaginedED Cohort 1 Compared to Traditional Schools Prior to Transition



**Table 2**

*Results Comparing 4th Grade ReimaginedED Cohort 1 Schools to Traditional Schools*

	ReimaginedED			Traditional			t	p	Sig
	Mean	SD	N	Mean	SD	N			
<i>School Characteristics</i>									
School Size	254.3	45.9	12	426.2	154.4	58	3.801	<0.001	***
<i>Student Characteristics</i>									
Female	0.510	0.921	12	0.489	0.067	58	-0.952	0.344	
Special Education	0.174	0.057	12	0.136	0.059	58	-2.003	0.049	**
Black, Hisp., or Ind.	0.877	0.158	12	0.639	0.239	58	-3.290	0.002	***
Econ. Disad. (x100)	67.375	13.362	12	41.385	16.450	55	-51.108	<0.001	***
English Lang. Learner	0.178	0.154	12	0.238	0.190	58	1.020	0.311	
<i>Academic Outcomes</i>									
Fall Reading Benchmark	42.519	6.128	12	49.519	9.570	58	2.265	0.027	**
Fall Math Benchmark	39.127	6.987	12	46.888	9.771	58	2.610	0.011	**
ELA Percentile	29.238	9.227	12	43.677	15.188	58	3.163	0.002	***
Math Percentile	24.160	7.097	12	39.575	14.773	58	3.517	<0.001	***
<i>SEL Outcomes</i>									
Pct. w/ >5 Unex. Abs.	0.700	0.155	12	0.397	0.181	58	-5.391	<0.001	***
Pct. w/ >1 Unex. Abs.	0.935	0.038	12	0.779	0.131	58	-4.064	0.001	***
Pct. w/ OSS Days	0.012	0.035	12	0.002	0.005	58	-2.228	0.029	**
<i>Transfer Outcomes</i>									
Pct. w/ In Year Transfer	0.119	0.074	12	0.078	0.055	58	-2.182	0.033	**

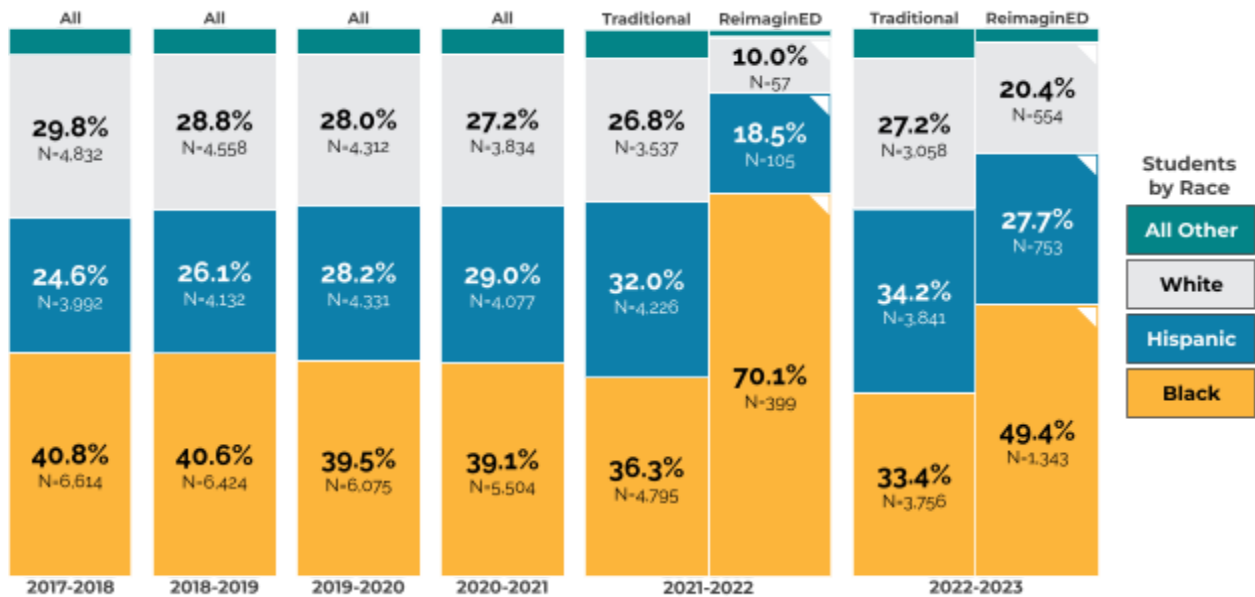
\*\*\* p < .01, \*\* p < .05





MNPS has seen steady growth in the percentage of fourth through sixth grade Hispanic students and a decrease in the percentage of Black students. Schools that transitioned in the first year of the ReimaginED Initiative had a higher percentage of Black students and a lower percentage of Hispanic students when compared to traditional schools ([Figure 3](#)). The second year of the ReimaginED Initiative more closely resembled the racial demographics of all fourth, fifth, and sixth graders in MNPS schools.

**Figure 3**  
*Enrollment by Race and ReimaginED Initiative 2017-2023*



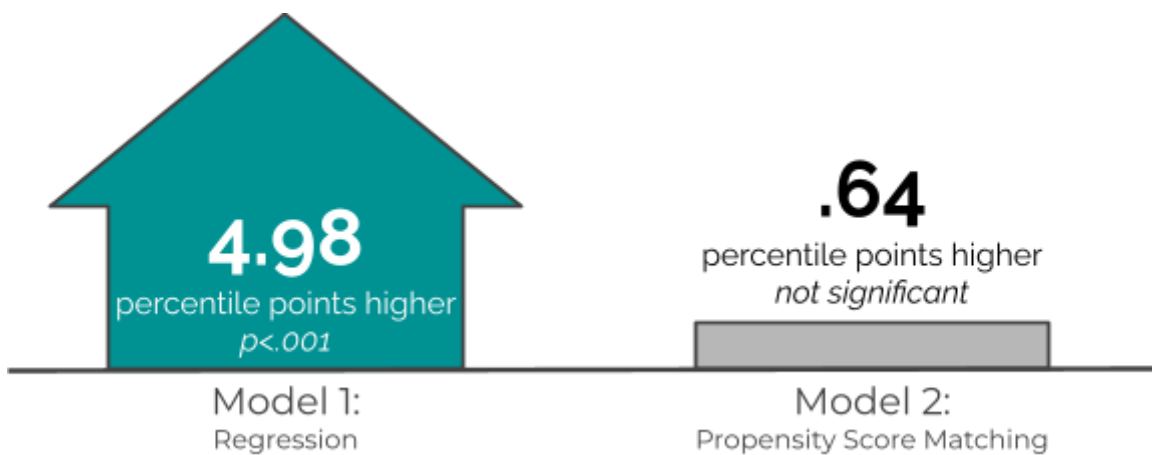
ReimaginED Cohort 1 schools differ across multiple domains from the schools that transitioned later. These differences in groups impact how we can interpret and generalize our findings. This initiative is a significant change to the fundamental structure of how elementary and middle schools serve their students. In the following sections, we will explore the academic, social-emotional, and enrollment impacts of this change and its effect on student enrollment patterns.

### Improved Literacy and Numeracy Outcomes for ReimaginED Initiative Students

The ReimaginED Initiative was started, in part, with the belief that an elementary school is the best academic setting for fifth graders, leading to improved reading and math outcomes. To compare the quantitative academic performance of

ReimaginED Cohort 1 students and their traditional peers, we considered the end-of-grade TCAP ELA percentile and math percentile scores. In their fifth-grade year, ReimaginED Cohort 1 students scored 4.976 percentile points higher ( $p < .001$ ) on the literacy test than their traditional school fifth-grade peers ([Appendix G](#)) when accounting for fourth-grade academic performance, student characteristics, and school characteristics. When comparing students in their fifth-grade year, reading outcomes are better when students are served in the elementary setting. However, these outcomes may not persist through the transition to middle school. We ran a second model that compared ELA outcomes across fifth and sixth grade accounting for prior year performance and absorbing for year. In this model, ELA performance was no longer statistically significant ( $p = .406$ ) at conventional levels ([Appendix H](#)).

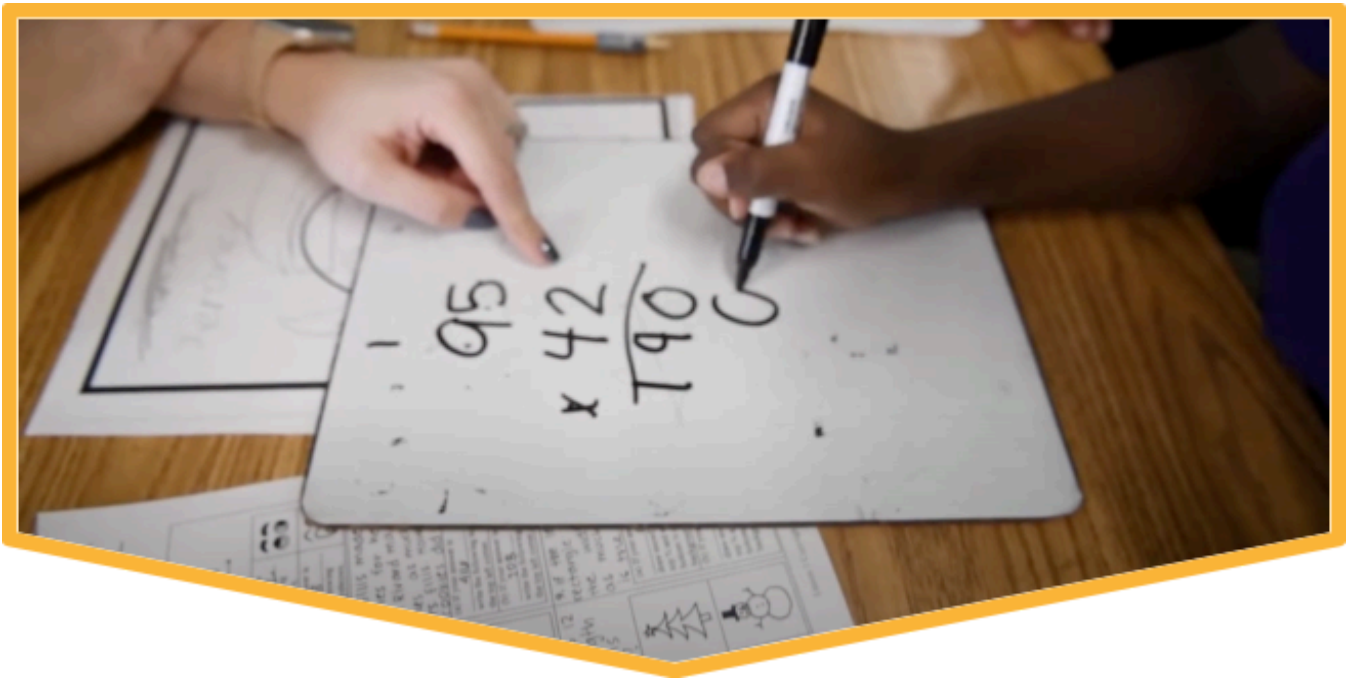
### ELA Percentile Outcomes Comparing Model 1 and Model 2



Given the large differences between treated students and schools and comparison students and schools, our preferred model limits the comparison group to those who have a similar likelihood of treatment. When matching schools and students<sup>3</sup> by their likelihood of being selected for treatment using PSM, we estimate that the effect of treatment is not statistically significant ( $p = .717$ ). This suggests that students who attended an elementary school for their fifth-grade year score no differently than students who attended a middle school for their fifth-grade year ([Table 3](#)).

The ReimaginED Initiative had a larger and more durable impact on math outcomes. ReimaginED Cohort 1 students scored 7.028 percentile points higher

<sup>3</sup>Schools were matched on average academic outcomes (ELA and math), the percent of students on free or reduced lunch, the percent of students who are Black, Hispanic, or Indigenous, the percent of students with more than five unexcused absences. Students were matched on the likelihood of school to be selected for treatment, race, special education status, English Language Learner status, number of unexcused absences and, when testing academic outcomes, ELA or math proficiency.

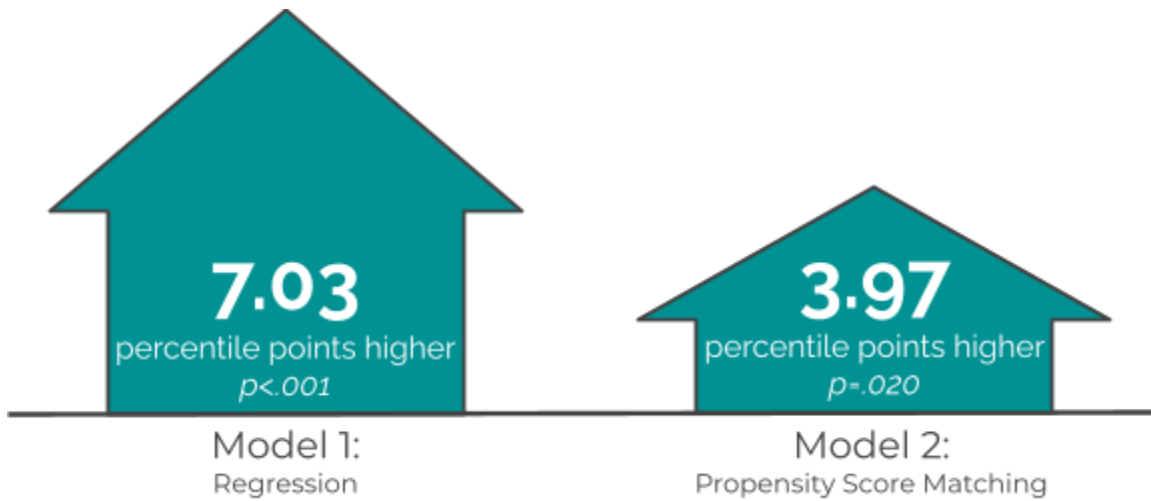


( $p < .001$ ) on the math TCAP exam than their peers in traditional fifth grades ([Appendix I](#)) when accounting for prior academic performance, student characteristics, and school characteristics. We ran a second model that compared math outcomes across fifth and sixth-grade years accounting for prior year performance and absorbing for year. In this model, we observed that math outcomes of ReimaginED Cohort 1 students were 3.145 percentile points higher ( $p < .001$ ) than the math outcomes of traditional students ([Appendix J](#)). Not only did the ReimaginED Initiative support students' math performance during their fifth-grade year but the effect continued into the sixth-grade year. The proposed model accounts for 75.4% of the observed variance ( $R^2 = .754$ ). We found similar academic results when accounting for the likelihood of selection of schools and students for treatment using PSM. Students in ReimaginED schools scored 3.968 percentile points higher ( $p = .020$ ) on the math TCAP exam than students in traditional schools ([Table 3](#)). This average treatment effect is consistent with what was found in our regression models. This preliminary analysis indicates that the ReimaginED Initiative leads to increased math outcomes for students who attend elementary school for fifth grade.

*continued on page 29*



## Math Percentile Outcomes Comparing Model 1 and Model 2



**Table 3**

*Table of Student-Level Average Treatment Effect Using Propensity Score Matching*

5th Grade Outcomes	Treated / Untreated		ATE	SE	p	Sig
	N	N				
<i>Academic Outcomes</i>						
ELA Percentile	394	359	0.643	1.775	0.717	
Math Percentile	394	352	3.968	1.711	0.020	**
<i>SEL Outcomes</i>						
Total OSS Days	401	372	-0.123	0.115	0.285	
Unex. Abs.	401	372	0.652	1.075	0.544	
S-S Relationships	286	218	0.249	0.113	0.027	**
S-T Relationships	287	217	0.208	0.099	0.036	**
Acad. Press	284	218	0.188	0.078	0.016	**
Sch. Engagement	285	214	0.315	0.121	0.010	**
Belonging	292	215	0.275	0.128	0.031	**
<i>Transfer Outcomes</i>						
In Year Transfers	401	372	0.036	0.034	0.280	

\*\*\*  $p < .01$ , \*\*  $p < .05$

Note. SE is the Abadie-Imbens robust Standard Error (Abadie & Imbens, 2012). ATE is the Average Treatment Effect. N-sizes vary because we ran multiple models which varied depending on what outcome was tested. For example ELA percentile included ELA percentile in the previous grade as a matching covariate. These models are described in [Appendix D](#).



School leaders and educators widely agreed that fifth-graders thrive academically in elementary school. They shared extensively about the literacy benefits of the ReimaginedED Initiative but rarely mentioned math. This contrasted



with our quantitative analysis which showed a larger impact on math outcomes than literacy outcomes. For reading outcomes, multiple stakeholders described the power of explicit reading instruction in elementary school settings and its positive impact on students' academic performance in literacy.

Staff acknowledge pedagogical differences between elementary and middle school settings. Teachers shared that elementary schools reinforce fundamental reading skills through direct instruction and professional development. This gives students an additional year of skill development. Other staff recognized that students needed to be exposed to complex texts earlier and students in an elementary setting may not receive this level of instruction. However, some teachers pointed out potential barriers to academic progress in middle school settings, saying, "They really don't teach reading in middle school." Pedagogical approaches are a point of tension between staff members. An elementary school leader shared that they are "trying to find the balance between progressing kids towards independence and advocacy for their learning." Teachers and administrators highlighted the whole-child approach used in elementary school settings, noting, "You're not just teaching the subject. You're teaching the child."

Elementary school  
"provides a safer  
environment  
and better reading  
instruction."  
**MNPS Administrator**

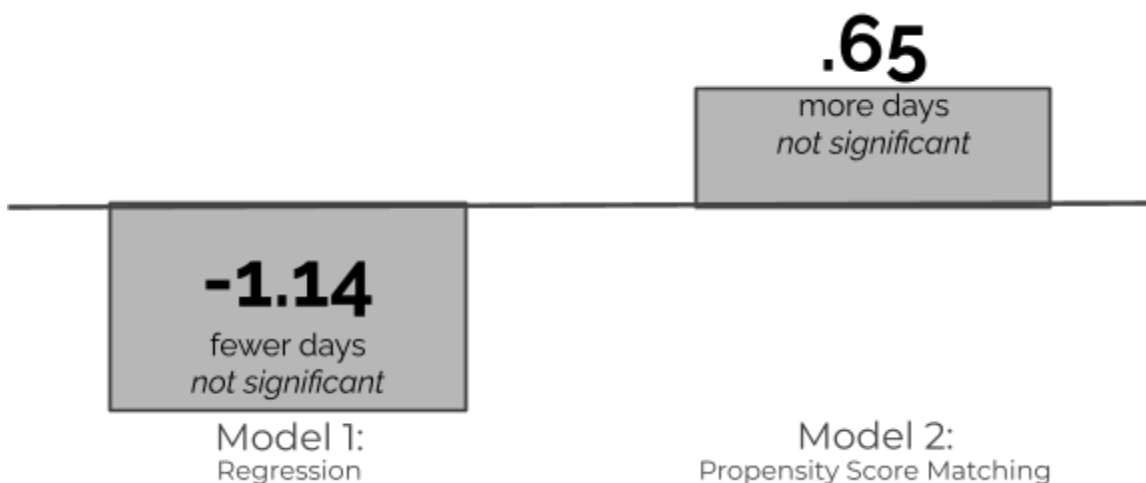
The school setting affects what and how the curriculum is delivered to students. Both teachers and administrators noted the relative academic strengths of keeping fifth-grade students in the elementary school setting, citing explicit

reading instruction, curricula, and supportive pedagogical approaches. As one principal shared, an elementary school “provides a safer environment and better reading instruction.” Our analysis showed that the ReimaginED Initiative had some benefits in literacy and a strong impact on math outcomes. Administrators and teachers navigate the complexities of differing pedagogical approaches and draw clear distinctions between elementary and middle school models with a clear preference for fifth-graders to be served in the elementary setting. One administrator observed, “We threw teachers out of middle school suddenly back to elementary school, a completely different environment for them, which was better for fifth-graders, but not so much for those middle school teachers who just got jerked to elementary school.” The changes implemented in the ReimaginED Initiative impact the entire school organization, including students, teachers, and parents.

### Observed Social-Emotional Benefits for ReimaginED Students

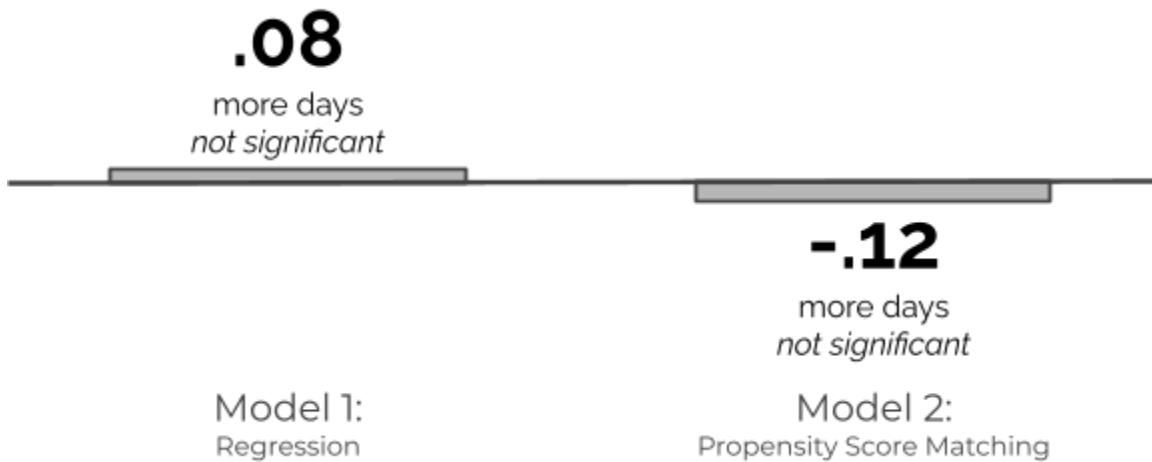
This research explored three indicators of social-emotional well-being: attendance, OSS rates, and student self-reports on a school climate survey. When comparing traditional fifth-graders to their peers enrolled in ReimaginED Cohort 1 schools through regression analysis, there were no significant differences in unexcused absences ( $p = .080$ ) at conventional levels ([Appendix K](#)). However, looking across fifth and sixth grades, accounting for prior year performance and absorbing the year, traditional students had almost one more day of unexcused absence ( $p = .005$ ) compared to their ReimaginED Cohort 1 peers ([Appendix L](#)). When matching schools and students by their likelihood of being selected for treatment using PSM, we estimate that treatment had no statistically significant effect ( $p = .544$ ) on unexcused absences ([Table 3](#)).

#### OSS Days Outcomes Comparing Model 1 and Model 2

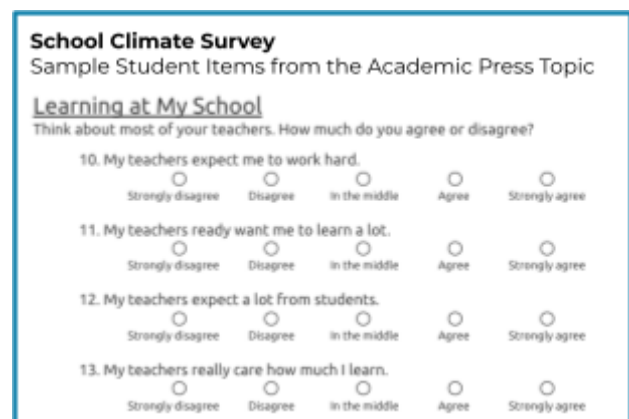


A similar trend emerged for OSS rates. Fifth-grade students in traditional schools and ReimaginED Cohort 1 schools had similar OSS rates when accounting for the previous year's OSS rates, student characteristics, and school characteristics ([Appendix M](#)). The difference was not significant at conventional levels ( $p = .483$ ). When considering both fifth and sixth grades, accounting for prior year performance, and absorbing the year, ReimaginED Cohort 1 students were more likely to receive OSS than their peers in traditional schools. The coefficient of the treatment was 0.279 ( $p = .010$ ), which accounts for almost a quarter day of school over the course of a school year ([Appendix N](#)). When matching schools and students by their likelihood of being selected for treatment using PSM, we estimate that treatment had no statistically significant effect ( $p = .115$ ) on OSS ([Table 3](#)).

### Unexcused Absence Days Outcomes Comparing Model 1 and Model 2



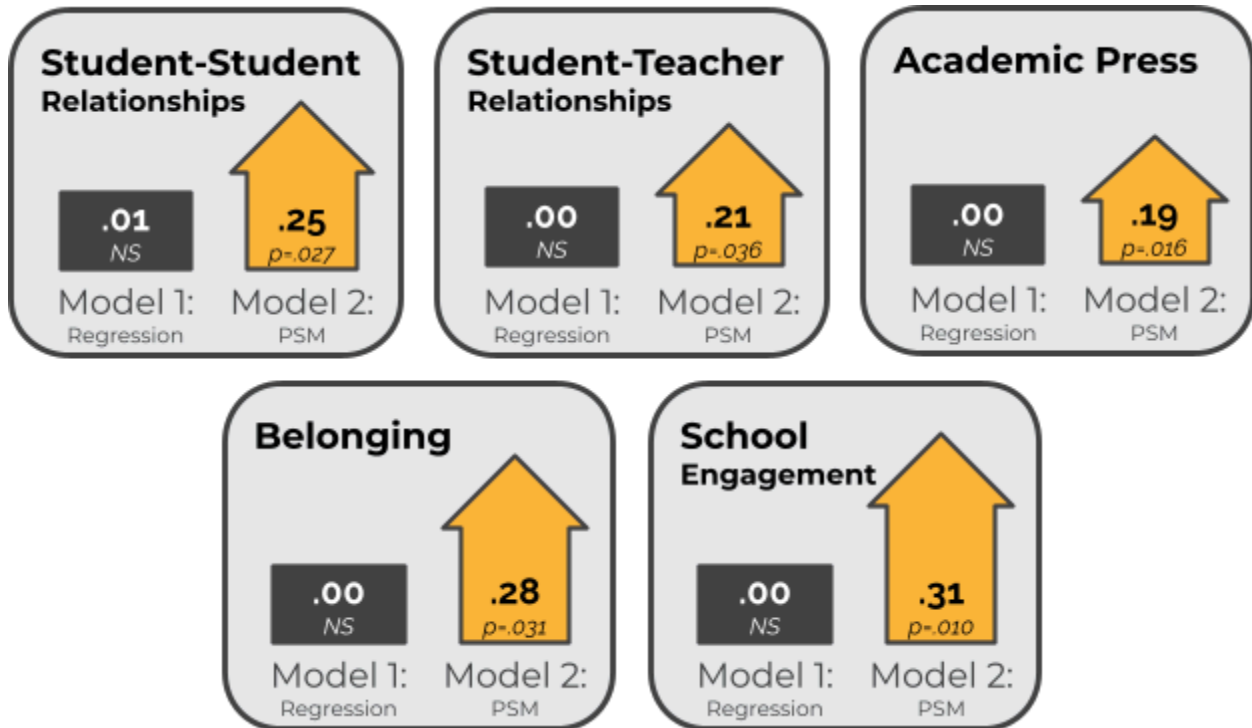
MNPS utilizes a Panorama school climate survey. Our research considered only the questions and five domains that have remained consistent<sup>4</sup> since the initial year of implementation with fifth and sixth-grade students: student-teacher relationships, student-student relationships, academic press, school engagement, and sense of belonging.



<sup>4</sup> MNPS has added questions to this screener since the 2021-2022 school year. Students are required to complete the screener during the fall semester and schools can elect to administer the screener in the spring. We could not create a model that accounts for prior year performance because the available data started in the 2021-2022 academic year.

Social-emotional learning outcomes are available for ReimaginED Cohort 1 students for fifth and sixth grade. ReimaginED Cohort 1 schools report statistically significant higher levels of academic press in the fifth grade, but no other school climate survey indicators were statistically significant at the school level in any domain ([Appendix O](#)). No significant differences were found at conventional levels when comparing fifth and sixth-grade ReimaginED Cohort 1 data with their peers in traditional schools.

### School Climate Screener Outcomes Comparing Model 1 and Model 2



We found contrasting results when accounting for the likelihood of selection of schools and students for treatment using PSM. Students in ReimaginED schools reported higher scores across all five school climate domains. On the five-point scale, students rate the school climate 0.249 points higher for student-student relationships ( $p = .027$ ). Student-teacher relationships are rated 0.208 points higher ( $p = .036$ ). Academic press is rated 0.188 points higher ( $p = .016$ ). School engagement is rated .315 points higher ( $p = .010$ ). Students rate their sense of belonging 0.275 points higher ( $p = .031$ ). For students in the matched sample, this analysis indicates that the ReimaginED Initiative leads to increased perceptions of school climate for students who attend elementary school for fifth grade.



## Development Considerations of Fifth Grade

The leaders and faculty members we interviewed reported a range of observed student behaviors in the newly reconfigured elementary schools, noting that fifth grade represents a critical developmental stage when students rapidly develop physically, socially, emotionally, and academically. Teachers and leaders described how students test boundaries, explore their identities, and forge new relationships with peers and adults during this stage. Several teachers noted the changes they see students undergo from the beginning to the end of this specific academic year. One teacher shared, “Fifth grade is an awkward year. In the beginning, they are babies, but by the end, they are more mature.” Some administrators and educators noted the interests of elementary school students in fourth grade, including Legos and dolls. They worried aloud that a transition to middle school at this time would be detrimental to their development. Existing friendships were situated as protective factors for fifth-graders in the elementary school setting by teachers and school leaders alike. These social dynamics and personal developmental changes led school leaders to conclude that the new elementary school setting could protect and stabilize students’ support systems during this difficult age-related developmental period.

“Fifth grade is an awkward year. In the beginning, they are babies, but by the end, they are more mature.”

**MNPS Teacher**



Students need specific skills, knowledge, and abilities as they transition to middle school. The list identified by school staff members we interviewed included personal safety, boundaries, interpersonal skills, conflict resolution, organization,

self-regulation, impulse control, self-management, decision-making, self-advocacy, and leadership. Opportunities to learn some of these skills, including leadership and organization, were evident across the newly configured

elementary schools. This skill-building takes time. One teacher observed, “They need another year in elementary where they can build their leadership skills and learn right from wrong.” Administrators also talked about teaching leadership through the intentional pairing of older students with younger elementary school students through buddy systems and club activities. Conversely, some administrators talked about physically distancing the fifth-graders in their buildings from the youngest students out of fear that the youngest learners might hear inappropriate language or see inappropriate behaviors. Having time to develop essential skills in elementary school is believed to be critical due to the structural difference between elementary and middle school settings. Despite necessary skill development, space to develop these skills is highly scripted in the elementary setting. For example, most elementary school students transition between classrooms escorted in lines instead of using hallways as another learning space for decision-making. While some staff shared that their school provides intentional programming to build skills, others mentioned structures in their elementary schools that may unknowingly inhibit the development of those skills.



Physical changes during this developmental stage impact the social well-being of both boys and girls. Teachers and administrators pointed to the physical size of students, hormones, body odor, sexual identity and orientation, brain development, emotions, and menstruation as key considerations for grade configurations across elementary and middle schools. The common and frequently shared narrative was that elementary settings are the more supportive environment at this developmental stage. One teacher noted, “We had a number of children in fifth grade exploring their sexual identity and orientation. And I was happy for them not to be doing that around a bunch of eighth graders.” School staff see elementary schools as the most appropriate setting for students going through developmental transition.

### **Challenges of Fifth Grade in Elementary School**

Interviews with school leaders and teachers were also helpful in identifying a few drawbacks associated with including fifth graders in an elementary school setting. These challenges are linked to various social and developmental issues that may be better addressed in an elementary school, as we note above. Schools

must simultaneously manage a broad range of complex developmental levels and needs represented across elementary schools. Staff members we interviewed pointed out some of the dramatic differences in growth, maturity, and developmental changes observed in an elementary school when students range from ages four to 11. A teacher shared about one student, “He was like six feet and he was bulky. Most of our fifth-graders are big, but then when you have Pre-K in the building, three and four-year-olds. [...] That's a big difference.” Physical size emerged as a consideration given the wide range of ages and developmental stages present in ReimaginED Cohort 1 schools.



Considering the structural differences between elementary and middle schools, extracurricular activities, compensation, and planning emerged as additional challenges. A principal lamented that “the extracurricular activities are the only drawback. Elementary just doesn’t have as many to offer.” Despite this challenge, a teacher noted that they were working to add culturally responsive clubs in their school because of the limited extracurricular options. Multiple school leaders shared that the leader compensation structure does not account for the increased complexity of the new elementary school structure. They advocated for higher compensation as they take on another grade level in the elementary school, noting that elementary school administrators are paid at lower rates than their middle and high school counterparts. School administrators shared that the development of a new master schedule that allowed for adequate planning time for classroom teachers and special area teachers was a particularly difficult task. Despite these issues, teachers and school leaders were overwhelmingly positive about the beneficial social and emotional impacts of keeping students in the elementary school setting for an additional year.



### **Supportive Elementary School Cultures**

Strong relationships found in elementary school emerged as a central theme in interviews with staff. Leaders and teachers talked about parents being elated that fifth grade remained in middle school. Our interviews with school leaders and staff paint a picture of middle schools as complicated and potentially dangerous places. One school leader shared, “There is a lot of fear and trepidation about leaving an elementary school experience to a public middle school experience.” According to MNPS elementary school staff, middle school students sit at desks in rows and not around classroom carpets. One teacher shared:

Middle school is more like a high school. They have multiple classes and have to go by a locker. They might have four or five different teachers. They have to advocate for themselves and keep up with what’s going on in these classes. These are important skills.

Teachers and administrators drew stark comparisons between middle and elementary schools. Teachers share that middle school students listen to lectures instead of engaging in small group activities, like in elementary schools. The transition to middle school is seen as a difficult transition for elementary students. Middle school teachers have four to six classrooms worth of students with whom they must build relationships. In contrast, elementary school teachers can know a single classroom of learners, love them, and prepare them with the skills needed to successfully traverse the inevitable transition to middle school. These negative perceptions of middle school and positive perceptions of elementary school color the interpretation of our findings.

## Keeping Fifth Graders in MNPS through the ReimaginED Initiative

Over the past four years, the count of enrolled students declined by 28.9% between fourth grade and sixth grade (from the 2017-2018 to 2020-2021 academic years). Of these transfers, 90.0% occurred between fourth and fifth grade ([Table 4](#)). In the first year of the ReimaginED Initiative, the count of enrolled students declined by 13.7% in ReimaginED Cohort 1 schools between grades four and five compared to 24.7% in traditional schools. If all MNPS students transitioned to middle school at the ReimaginED Cohort 1 student

movement rate of -13.7%, 540 additional students would have stayed in the district for their fifth-grade year. One principal commented that enrollment was a motivator for the ReimaginED Initiative, stating, “I think that’s one of the reasons they did this because they were hoping to get middle school enrollment up.” This data indicates that grade-level configuration changes may have a significant impact on student enrollment, at least in the short term.

“I’m hopeful that [the ReimaginED Initiative] translates to more students staying in the district and more families choosing to keep their families in the district.”

**MNPS Teacher**



**Table 4***Count of Students by Grade Level, Organized by Cohort of Entry to Fourth Grade*

Cohort	Total			Attrition 4th to 6th	By School Type			Attrition 4th to 6th
	4th	5th	6th		4th	5th	6th	
2017		4,901	4,864					
			-0.8%					
2018	6,624	4,897	4,863	-26.6%				
		-26.1%	-0.7%					
2019	6,052	4,500	4,212	-30.4%				
		-25.6%	-6.4%					
2020	6,020	4,293	4,154	-31.0%				
		-28.7%	-3.2%					
2021	5,566	4,265	4,025	-27.7%	ReimaginED	659	569	404
		-23.4%	-5.6%				-13.7%	-29.0%
					Traditional	4,907	3,696	3,621
							-24.7%	-2.0%
2022	5,349	4,504			ReimaginED	2,818	2,313	
		-15.8%					-17.9%	
					Traditional	2,531	2,191	
							-13.4%	
Total <sup>^</sup>		-24.2%	-3.2%	-28.9%	ReimaginED		-17.2%	
					Traditional		-20.9%	

Note. Cohort represents the school year students entered fourth grade (2021 is the school year 2020-21). Italicized numbers are the percent change in population of the cohort as measured from the preceding school year or overall, noted in the column header. Retained students are adjusted to the preceding cohort.

<sup>^</sup> Totals are calculated for years with data for each grade level.

It is important to note significant differences between student characteristics, behavioral outcomes, and academic outcomes between students who leave between fourth and sixth grade and those who remain in MNPS ([Appendix P](#)). Students who transfer are less likely to be served in Special Education and less likely to be students of color. The students who transfer have fewer unexcused absences and higher testing outcomes.

In MNPS, families have a wide range of academic options, “Families can choose from their zoned school, apply to a charter school, or select a school outside their neighborhood or zone through the school options process” (MNPS, n.d.e). The ReimaginED Initiative layers an additional choice on this existing framework. Administrators and teachers shared their perspectives on how the ReimaginED Initiative has impacted school enrollment. Charter schools, private schools, application schools, changing demographics, gentrification, and natural disasters were all referenced as reasons enrollment dropped between elementary and

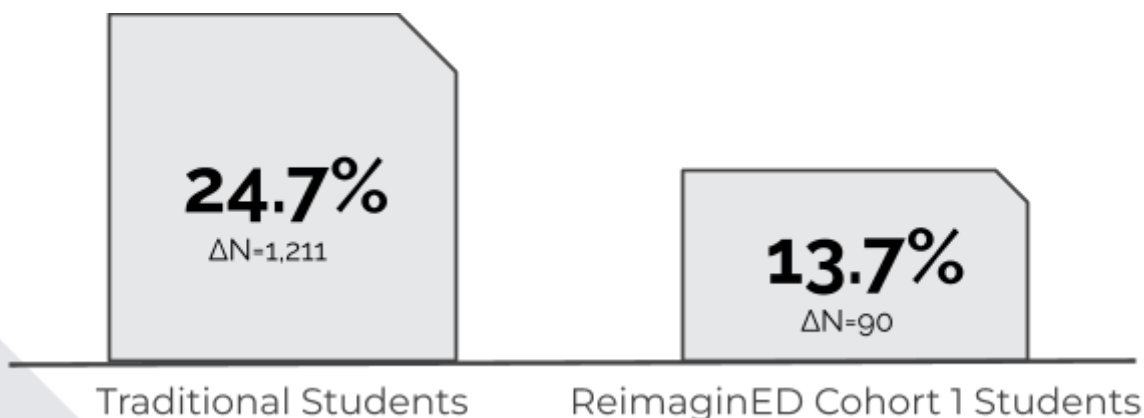
middle schools. One school staff member shared community changes they have seen during their tenure and how it impacts school choice,

I have seen poverty increase. Our students are needing more IEPs [Individualized Education Plans] put into place. We're seeing more issues with students who are addicted to drugs. Parents out of the picture. Parents in and out of jail. Kids raised by their great-grandma or grandpa. It's just, people with money in the area send their kids to a different private school.

A variety of factors contribute to the decision of where a student attends school. [Figure 4](#) shows a Sankey chart of the flow of students between school settings from fourth to fifth grade. This figure is available with N-size in [Appendix O](#) and weighted by percentage of the fourth-grade population in [Appendix R](#). This figure shows the significant portion of students who transfer out following their fourth-grade year. Also, this shows the influence of application schools as a choice option for students.

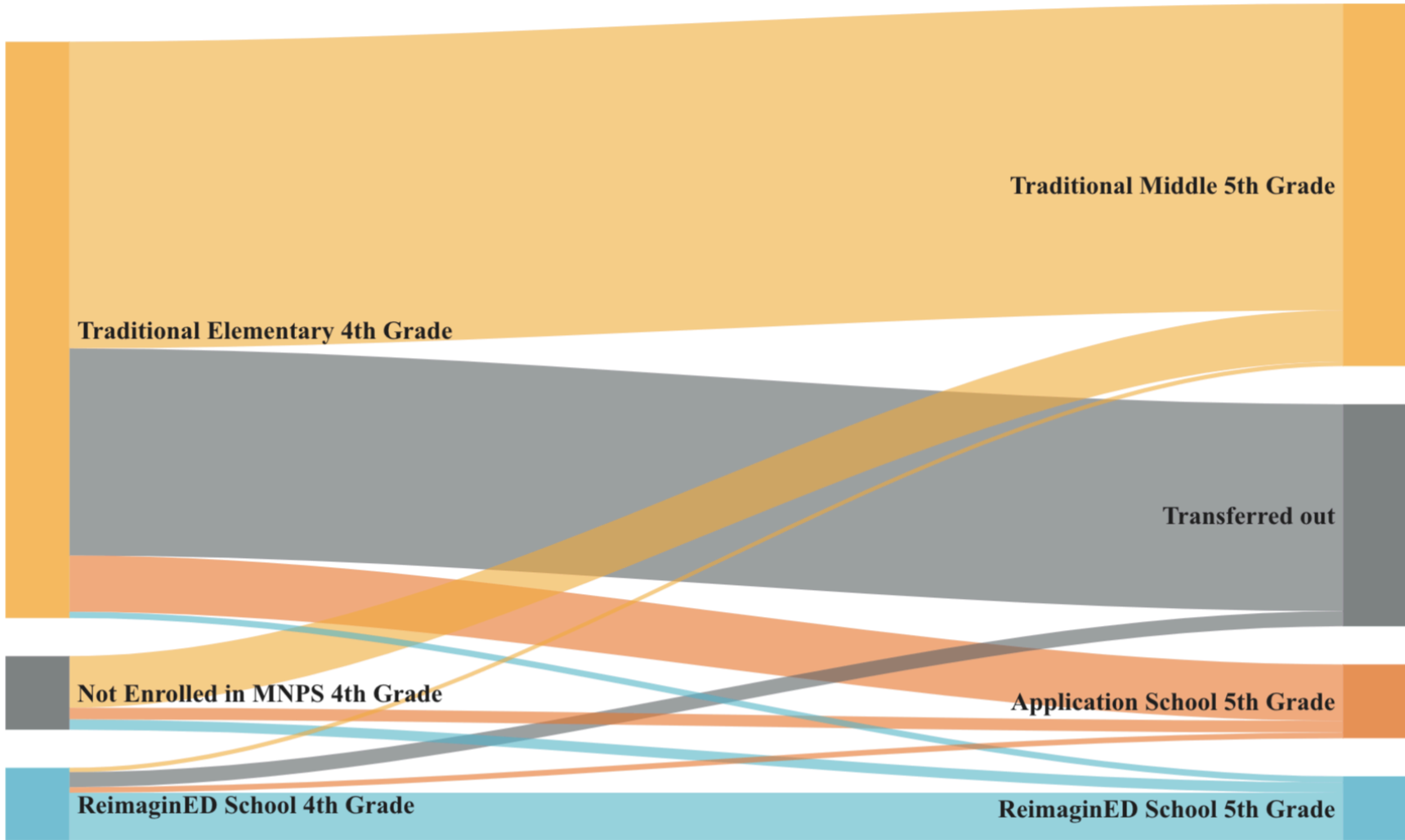
A chi-square test of independence reveals that the fourth-grade school setting was significantly associated with the fifth-grade school setting,  $X^2 (df = 3, N = 5102) = 2818.9648, p < .00001$  ([Table 5](#)). We excluded students who transferred into the district for their fourth-grade year for the chi-square test.

### Reduction in 4th to 5th Grade Enrollment



**Figure 4**

*Sankey Diagram, ReimaginED Cohort 1 from Fourth Grade to Fifth Grade*



Note. This chart is a measure of the number of common students between the years. This does not necessarily reflect the overall population in the fourth and fifth grades.



**Table 5***Chi-Square Contingency Table*

The chi-square statistic is 2818.9648. The p-value is <0.00001. The result is significant at  $p < .05$ .

	Application	ReimaginED	Traditional	Transferred Out	<b>Row Totals</b>
ReimaginED School in 4th Grade	44 (54.50) <i>2.02</i>	375 (47.45) <i>2260.93</i>	34 (273.64) <i>209.86</i>	118 (195.41) <i>30.66</i>	<b>571</b>
Traditional School in 4th Grade	443 (432.50) <i>0.26</i>	49 (376.55) <i>284.92</i>	2411 (2171.36) <i>26.45</i>	1628 (1550.59) <i>3.86</i>	<b>4531</b>
<b>Column Totals</b>	<b>487</b>	<b>424</b>	<b>2445</b>	<b>1746</b>	<b>5102 (Grand Total)</b>

Note. The contingency table provides the number of observations, the expected number of observations (in parentheses), and the chi-square statistic (italicized).

As administrators and educators observed, the school setting is an important consideration in a family's decision about where to send their child. The wide range of options in and around MNPS complicates a family's decision over their child's educational setting. A large number of students leave the district between fourth and fifth grade. This early evaluation of the ReimaginED Initiative shows that locating fifth-grade students in the elementary setting may delay a family's decision to transfer their children out of the district. Administrators and staff indicate that parents are pulled toward educational opportunities for their children in private and out-of-district settings. Environmental and social factors also push students and families out of their neighborhood school options.

### **Environmental Factors Impacting Enrollment**

There are many factors affecting enrollment trends over the past few years. The launch of the ReimaginED Initiative implementation aligned with the COVID-19 pandemic. As schools navigated the pandemic, Nashville also weathered multiple natural disasters including extensive flooding, tornadoes, and significant snow storms. According to administrators and staff, this accelerated gentrification in neighborhoods. One administrator shared:

This area got flooded [...] that put the gentrification of this area in warp speed. It's almost completely changed this neighborhood in the last ten years [...]. Most of the kids who lived in the neighborhood at that time have moved out.

Teachers and administrators shared that new homes are rented through short-term services like Airbnb due to increasing housing costs. Families still living in geographic proximity to the ReimaginED Cohort 1 schools, reportedly favor application schools. Application schools still accept fifth-grade students in their middle schools so families apply. One teacher commented, “Parents feel the



pressure to get their kids into a good middle school [...]. If they don't start after fourth grade, they won't get there.” In considering the long-term impact, a school leader shared, “I'm hopeful that [the ReimaginED Initiative] translates

to more students staying in the district and more families choosing to keep their families in the district.” School leaders and teachers attribute most parental school choices to the pressures to avoid a certain middle school structure or secure a spot in a selective application or private school.

The ReimaginED Initiative is significantly shifting the educational landscape in MNPS. It is the latest chapter in a history of district-scale organizational shifts, which includes desegregation, charter, magnet, and voucher movements. Broadly, this initiative is trending toward positive academic outcomes, social-emotional indicators, and enrollment numbers. Interviews with administrators and teachers explain that this shift, in part, was intended to reduce the large number of students who leave the school district following their fourth-grade year to enroll in other schooling options.

Elementary school staff's preference for school structure leads individuals to search retrospectively for justifications for their preference. The teachers and administrators were overwhelmingly positive about how the district rolled out this change, citing strong organization, community meetings, clear communication, and opportunities to share their opinions. Yet, they were unsure when asked if the district had achieved its goals. One principal stated, “I honestly can't say for sure [...] what the ultimate goals are” and a teacher shared, “I feel like we're pretty uninformed about the vision. I don't feel like we really know except for the broad strokes, we're adding fifth grade back because it's better for the kids.”



Our research demonstrates that the elementary school setting has a far-reaching and positive impact on fifth-grade students. Administrators and educators were quick to share the benefits of elementary school for fifth graders. They also shared anecdotes of how parents communicated their preference for this school structure. MNPS began this initiative with the belief that serving fifth-grade students in the elementary setting would improve academic and social-emotional outcomes and reduce departures from the school district. In each of these areas of inquiry, the data illustrated the beneficial impacts of keeping students in elementary school for an additional year. The students in the schools selected to transition during the first year of the Reimagined Initiative are different in many ways than the students who transition later. We accounted for these differences in our statistical models and found that the benefits persisted. This early evaluation of Reimagined Initiative indicates that it has positive academic, social-emotional, and transition effects.

## Discussion

Across all three research questions, our findings echo the extant literature and provide a nuanced narrative about the elementary to middle school transition. Students who remained in the elementary school setting for fifth grade outperformed their peers academically, reported a more beneficial school climate, and remained enrolled at higher rates.

### Strong and Lasting Academic Impacts

We found significant differences in math and literacy outcomes between students who experienced fifth grade in elementary school and those who experienced fifth grade in middle school. This finding aligns with the work of Rockoff and Lockwood (2010) who write about the negative math and English outcomes associated with students moving out of elementary school. By keeping students in elementary school for an additional year (fifth grade), we found that they outperformed their fifth-grade peers in middle school. We found that experiencing fifth grade

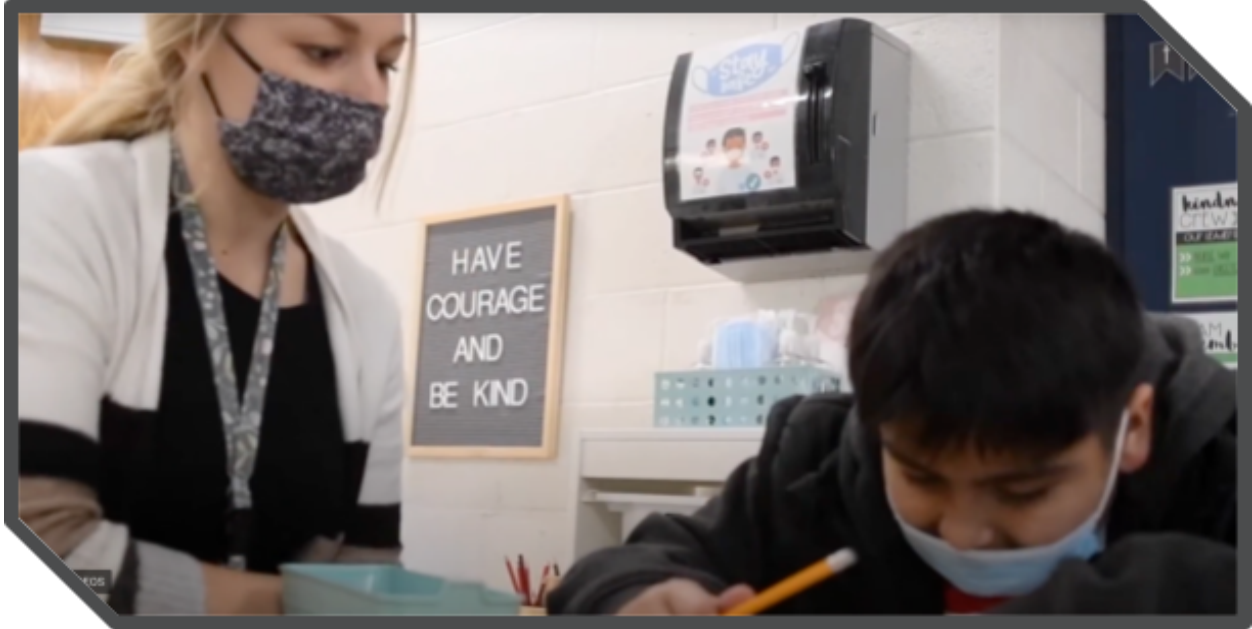
in an elementary school setting was a protective factor for academics. When looking across fifth and sixth-grade academic data, our models showed the benefits of a longer elementary school setting. Teachers and administrators reiterated



these findings and told us about the relative instructional strength of explicit reading instruction in elementary schools and the strong relationships between educators and students that facilitated learning. Staff did not talk about the benefits of the elementary setting on math outcomes despite our strong quantitative findings.

### More Time In and Connection with School

In considering the social-emotional impact of the ReimaginED Initiative, we explored attendance, behavior, and school climate survey data. Across attendance and behavior indicators, we found misalignment with the existing literature and stated goals of MNPS. One of the MNPS stated goals for the ReimaginED Initiative was to improve social and emotional competencies such



as attendance and behavior (MNPS, n.d.d). There was no significant difference in the attendance rates and OSS rates of Reimagined Cohort 1 students. Our OSS finding differs from the work of Cook and colleagues (2008) and Theriot and Dupper (2010) who saw significantly increased disciplinary trouble for students in the middle school setting.

Regarding development, teachers and administrators shared a long list of skills that they felt students needed to have for a successful transition to middle school. These skills aligned with the SEL competencies established by CASEL (2023) and the work of Spies (2014) who wrote about SEL concerns from multiple stakeholders in the K-12 system. Echoing this research and the work of Cook and colleagues (2008), who evaluated the structural differences between elementary and middle school settings, MNPS teachers and administrators believed that necessary skills were better developed in elementary school settings. Across our research, the findings from the literature about students' social-emotional needs as they move from elementary to middle school were replicated and seen in the statistically significant school climate survey results of our PSM analysis.

Additionally, during this same time, students undergo significant physical changes. Carolan and colleagues (2015) write about the mismatch between the school environment and the developmental needs of young people. This theme emerged across interviews with administrators and teachers who expressed worry about the middle school experience. In the literature, Lovett-Willson and colleagues (2022) suggest that students' development and their physical size impact students socially as they move to middle school. Across interviews we

heard about some of the parallel challenges of physically large fifth graders in the elementary school setting.

## Potential for Increased MNPS Fifth-Grade Enrollment

Shifts in enrollment have been outlined in the literature by Erickson (2016) and Reese (2013). Erickson (2016) writes about consolidation movements and restructuring efforts that have been implemented in part to dissuade families from leaving the school district. We heard about the many factors motivating students and families to leave the district through our interviews with administrators and families. They spoke about nearby charter schools, application schools, and private options. Despite this prevalent narrative, we found that by offering fifth grade in elementary school, higher rates of students chose to stay in MNPS for their fifth-grade year.

In Indianapolis, the school district was motivated to make a parallel shift to “maximize that student enrollment” (Weddle, 2022, para. 14). In the first year of the ReimaginED Initiative, there was a 13.7% reduction between grades four and five in the count of students enrolled in ReimaginED Cohort 1 schools compared to a 24.7% reduction in the count of students enrolled in traditional schools.



Considering the base funding rate for students in the 2023-2024 academic year, this shift would increase student funding by over 3.26 million dollars annually, a conservative estimate that does not consider weighted funding for certain groups (MNPS, n.d.a).

However, our research found that despite students staying in MNPS for ReimaginED fifth grade, many students left the district before the start of middle school. This finding is aligned with the work of Weiss and Kipnes (2006) who found pervasive dissatisfaction with the middle school experience. The ReimaginED Initiative has the potential to keep students in the district for the entirety of elementary school (including fifth grade); however, additional steps may need to be taken to change middle school enrollment patterns.

## Recommendations

### Establish a multi-faceted outreach strategy to improve perceptions of middle school.

Administrators and educators shared the worries they have heard from parents regarding middle school placements. These perceptions of middle school are often based on secondhand accounts of what families have heard from others. Altogether, these narratives have coalesced into a negative perception of middle schools and the middle school experience. Our research illuminates how important transitions are for students and staff. Districts facing similar shifts must consider any negative perceptions about schools and schooling in their system.



In MNPS, a campaign about the high-quality academic instruction and supportive environments offered in middle school could help counter pervasive narratives about the perils of middle school. One school leader suggested having parents and guardians

visit middle schools, “You know, I’m always telling them to take a tour and go see it on a random day, ask to sit in the class.” MNPS should formalize opportunities for learning about MNPS middle schools through firsthand touring and shadowing experiences for students and families. Information should be shared using videos, social media, and school and community-based presentations highlighting the quality instructional practices happening in MNPS middle schools. Explicitly preparing students and families for transitions between schools starting in fourth grade could help ease their fears and apprehensions about new and unfamiliar places. Establish a multi-faceted outreach strategy to improve perceptions of middle school.

## **Create professional development opportunities for elementary and middle school teams to learn about and align educational approaches.**

Our research highlighted the academic benefits of the elementary setting for fifth-grade students. Elementary school teachers share that their pedagogical practices benefitted students academically through explicit instruction, small group learning opportunities, and strong relationships with students. However, there were concerns that elementary school students may not be adequately prepared for the demanding change in standards between school settings.

Within MNPS schools, there should be ongoing collaboration between the elementary and middle school settings to scaffold a gradual release approach. In elementary school, students should practice skills needed for middle school as they approach the transition. In middle school, students should be supported in exercising those same skills through their first year. Developing a robust vertical alignment between elementary and middle school settings is key to a successful transition. In our interviews, elementary school teachers shared a long list of skills students need to move to middle school. They also shared concerns about the structural differences between school settings including navigating lockers, transitioning between classes, and learning the expectations of multiple teachers and classes daily. Elementary schools have opportunities to help students develop the skills needed for middle school. However, the perspectives of middle school educators are critical for elementary school staff in understanding which skills to prioritize. Bringing elementary and middle school teams together to discuss the needs of students through transitions could transform this space. Minor shifts to the educational approach in both elementary and middle school settings could create a more supportive environment as students change schools. Create professional development opportunities for elementary and middle school teams to learn about and align educational approaches.



## Evaluate SEL practices and curricula currently being used across the district to identify best practices for implementation.

Elementary administrators and educators consistently identified the benefits of SEL supports and practices for fifth-grade students. Staff were quick to share the importance of providing leadership opportunities, explicitly teaching organization and self-management, and coaching students on navigating the complexities of peer conflict. They voiced concerns about what student-staff as well as student-student relationships look like in the middle school setting. These differences were also

observed in our quantitative analysis of matched students on a school climate survey. Elementary schools are better at providing SEL for students for matched students than middle schools. When looking



across all fifth-grade students, self-reported indicators of SEL were more closely

tied to school SEL characteristics than to a student's enrollment in a Reimagined Cohort 1 school.

MNPS should consider deepening its understanding of SEL practices in use across the district and sharing about the available supports and curricula in elementary and middle schools. Ultimately this could help identify bright spots, standardize practices, and create greater alignment between elementary and middle schools. Evaluate SEL practices and curricula currently being used across the district to identify best practices for implementation.

## **Consider compensation implications for school leaders associated with moving fifth grade to elementary school.**

The ReimaginED Initiative led elementary school administrators to increase the number of students they serve and the number of staff they manage. At the same time, middle schools reduced their number of staff and students. Elementary schools increased their organizational complexity. Some administrators observed that middle schools have fewer students and staff following this organizational shift yet are compensated at a higher level than elementary school administrators. Consider compensation implications for school leaders associated with moving fifth grade to elementary school.

## **Plan a long-term research strategy to understand better the ReimaginED Initiative's impact across all four years of implementation.**

The ReimaginED Initiative Cohort 1 students are not representative of the school district at large. Our research offers a brief evaluation of the impact of this initiative on students in this first cohort. The early indicators are very positive but we cannot yet evaluate the overall impact of this initiative. It would benefit the organization to conduct additional research about the emerging trends with later cohorts and the long-term impacts and persistent effects for ReimaginED Cohort 1 students. This research does not evaluate whether the positive impacts seen in math and literacy performance for ReimaginED Cohort 1 students are consistent across all middle school years and beyond. Future research could help MNPS understand if students who experienced the ReimaginED Initiative in fifth grade are better prepared for the transition to high school and the post-secondary space.

Our research is missing the perspectives of students, parents, middle school administrators, and middle school teachers. Interviews with parents could help the district understand the motivations of parents and guardians as they make

educational decisions for their students. We suggest conducting interviews or surveying students to learn about their perceptions of middle school and their preparedness. This recommendation is aligned with the work of Spies (2014) who



found that students facing a transition to middle school were concerned about time management, self-advocacy, organization, resilience, and other SEL competencies. Gathering the perspectives of middle school staff about the impact of the Reimagined Initiative and how they experience their incoming sixth-grade students would round out the qualitative narrative. Additionally, MNPS should conduct multiple listening rounds with staff before and after implementation to ensure that this initiative continues to be implemented with integrity. In our MNPS interviews, compensation and planning time emerged as areas of concern for the elementary staff. As this initiative matures, new concerns may emerge that may not have been on the staff's radar prior to the initial rollout. Plan a long-term research strategy to understand better the Reimagined Initiative's impact across all four years of implementation.



## Conclusion

MNPS will not fully understand the ReimaginED Initiative's impact until the whole district has transitioned. For many, the ReimaginED Initiative delays a critical educational decision (to transfer out or remain in the district) by one year. However, the decision is not solely about the grade level, it also includes the school setting. So long as private, charter, magnet, and application middle schools accept fifth-grade classes, parents must contend with this big decision regardless of their school's ReimaginED status. School staff have shared that parents worry their children will only be accepted to their school of choice if they transition after fourth grade.

The ReimaginED Initiative may be unique to MNPS. Yet, schools across the country face the challenges of making critical decisions about implementing instructional approaches, allocating district resources, and supporting the needs of students. This project presents a unique opportunity to evaluate the early effect of structural shifts on student outcomes across various measures. Structural shifts can and do impact individual student outcomes. MNPS has shown that it is possible to undertake system-wide shifts in the structure of organizations in a way that satisfies parental expectations, teacher preferences, and administrative goals.

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# Images

Pages 2 & 3 Nashville Skyline (Edited)

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Page 9 Three Student Images with Shapes in Background

An Initiative to Improve Academic Outcomes for All Students. Metro Schools ReimaginED. Extracted from video and edited. <https://www.mnps.org/cms/one.aspx?portalid=32970327&pageid=36429224>.

Page 10 Exterior of a School Building Showing Main Entrance

An Initiative to Improve Academic Outcomes for All Students. Metro Schools ReimaginED. Extracted from video. <https://www.mnps.org/cms/one.aspx?portalid=32970327&pageid=36429224>.

Page 11 Students Working on Math Problems

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Page 12 Students Exercising Together, Doing a Yoga-Style Stretch

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Page 13 Teacher Leading a Small Group in Math, Lockers in Background

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Page 16 Students Sitting Together

Curriculum & Instruction by Tier. Curriculum and Instruction. <https://www.mnps.org/cms/One.aspx?portalId=32970327&pageId=33402501>.

Page 18 Student Practicing Measurement

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Page 21 Students Looking at a Cardboard Castle

Visionary, Innovative Options for Your Student. Magnet Schools. <https://www.mnps.org/cms/One.aspx?portalId=32970327&pageId=37938596>.

- Page 27      Student Completing a Math Problem, Two Hands  
An Initiative to Improve Academic Outcomes for All Students. Metro Schools ReimaginED. Extracted from video. <https://www.mnps.org/cms/one.aspx?portalid=32970327&pageid=36429224>.
- Page 29      Mock Interior of a School Building with a Slide  
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- Page 33      Teacher in Green Helping a Student on a Laptop  
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- Page 34      Student Playing a Guitar  
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- Page 35      Students in a Music Class Playing Ukuleles and Xylophones  
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- Page 36      Teacher Reading a Book to Class  
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- Page 37      Students Working on a Math Problem at the Board  
Curriculum & Instruction by Tier. Curriculum and Instruction. <https://www.mnps.org/cms/One.aspx?portalId=32970327&pageId=33402501>.
- Page 42      Staff in Purple Leading an Activity with a Drum  
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- Page 43      Students Observing a Polliwog  
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- Page 44     Students in Yellow Swinging  
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- Page 45     Teacher Helping a Student with an Assignment  
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- Page 46     Student Looking at Laptop with a Robot Figurine Creation  
An Initiative to Improve Academic Outcomes for All Students. Metro Schools ReimaginED. <https://www.mnps.org/cms/one.aspx?portalid=32970327&pageid=36429224>.
- Page 47     Students in Red Standing Together  
An Initiative to Improve Academic Outcomes for All Students. Metro Schools ReimaginED. Extracted from video. <https://www.mnps.org/cms/one.aspx?portalid=32970327&pageid=36429224>.
- Page 49     Mock Exterior of a School Building with Driveway  
An Initiative to Improve Academic Outcomes for All Students. Metro Schools ReimaginED. Extracted from video. <https://www.mnps.org/cms/one.aspx?portalid=32970327&pageid=36429224>.
- Page 51     Three Students Standing Together  
An Initiative to Improve Academic Outcomes for All Students. Metro Schools ReimaginED. Extracted from video and edited. <https://www.mnps.org/cms/one.aspx?portalid=32970327&pageid=36429224>.



## Appendix A

### Transition Schedule (MNPS, n.d.b)

2021-2022 (12) <i>Focus Schools</i>	2022-2023 (23)	2023-2024 (6)	2024-2025 (14)
<ul style="list-style-type: none"> <li>● Cockrill Elementary</li> <li>● Park Avenue Elementary</li> <li>● Robert Churchwell Museum Magnet Elementary</li> <li>● Jones Paideia Elementary Magnet</li> <li>● Ida B. Wells Elementary</li> <li>● Shwab Elementary</li> <li>● Tom Joy Elementary</li> <li>● Chadwell Elementary</li> <li>● Hattie Cotton Elementary</li> <li>● Joelton Elementary</li> <li>● Cumberland Elementary</li> <li>● Alex Green Elementary</li> </ul>	<ul style="list-style-type: none"> <li>● Amqui Elementary</li> <li>● Bellshire Elementary</li> <li>● Gateway Elementary</li> <li>● Goodlettsville Elementary</li> <li>● Neelys Bend Elementary</li> <li>● Old Center Elementary</li> <li>● Andrew Jackson Elementary</li> <li>● Dodson Elementary</li> <li>● Dupont Elementary</li> <li>● Hermitage Elementary</li> <li>● Hickman Elementary</li> <li>● McGavock Elementary</li> <li>● Napier Elementary</li> <li>● Pennington Elementary</li> <li>● Ruby Major Elementary</li> <li>● Stanford Elementary</li> <li>● Stratton Elementary</li> <li>● Tulip Grove Elementary</li> <li>● Dan Mills Elementary</li> <li>● Inglewood Magnet Elementary</li> <li>● Lockeland Design Center</li> <li>● Rosebank Magnet Elementary</li> <li>● Warner Elementary School</li> </ul> <p><b>11 Accelerated transition (announced 12/14/2021):</b></p> <ul style="list-style-type: none"> <li>● Una Elementary</li> <li>● Fall-Hamilton Elementary</li> <li>● Glenview Elementary</li> <li>● Charlotte Park Elementary</li> <li>● Gower Elementary</li> <li>● Carter-Lawrence Elementary</li> <li>● Sylvan Park Elementary</li> <li>● Eakin Elementary</li> <li>● Crieve Hall Elementary</li> <li>● Norman Binkley Elementary</li> <li>● John B. Whitsitt Elementary</li> </ul>	<ul style="list-style-type: none"> <li>● Julia Green</li> <li>● Percy Priest</li> <li>● Waverly-Belmont</li> <li>● Glendale</li> <li>● Harpeth Valley</li> <li>● Westmeade</li> </ul>	<ul style="list-style-type: none"> <li>● Lakeview</li> <li>● JE Moss</li> <li>● Smith Springs</li> <li>● Thomas Edison</li> <li>● Mt. View</li> <li>● AZ Kelley</li> <li>● Henry C. Maxwell</li> <li>● Glencliff</li> <li>● Glengarry</li> <li>● Paragon Mills</li> <li>● Haywood</li> <li>● Tusculum</li> <li>● Granbery</li> <li>● May Werthan Shayne</li> </ul>

## Appendix B

### MNPS Leader and Teacher Interview Protocol

#### Introduction/Orientation

*I would like to thank you again for your willingness to participate in the interview today. My partner and I are students at Vanderbilt University and we're studying the ReimaginED Initiative. Moving fifth grade from a middle school to an elementary setting is a significant shift. We looked at the data but we are curious about what you think about your experiences.*

***As researchers, we wonder how this transition to elementary fifth grade has affected you, your school, your students, and your work environment.***

*Your perspectives and expertise will be critical in holistically understanding this shift in MNPS. We are specifically looking at the academic, social-emotional, and enrollment impact on students and how MNPS implemented the ReimaginED Initiative.*

*I'll ask you a series of questions during this interview. If there are any questions that you do not want to respond to, we can skip over them. I will be using Otter.ai to record this interview. My partner and I are the only two people who will listen to this recording. Any information used from this interview will be anonymous. Do you have any questions about what is going to happen? Are you still comfortable with recording today's conversation?*

1. How long have you been at the school and what is your role?
  - a. Have you worked at any other school prior to this one?
2. How's the transition of fifth grade to elementary school going so far?

#### Implementation and Evaluation

*The next handful of questions focus on implementation and evaluation.*

3. Thinking back, how did the district communicate the plans for this initiative to you?
4. What is MNPS hoping to accomplish with the ReimaginED Initiative?
5. In your view, to what extent has MNPS achieved their goals at this point?

#### Academics

*The next handful of questions focus on academics.*

6. What are the strengths of offering fifth grade in elementary instead of middle school, academically?
7. What are the challenges of offering fifth grade in elementary instead of middle school, academically?
8. If I walked into a classroom, what would I see fifth-graders learning? What would they be doing?

- a. How is this different from what you would see if you walked into a middle school?

### **Social-emotional**

9. How do **you** define social-emotional skills?
10. What social-emotional skills do students need to effectively transition into middle school?
11. What social-emotional skills do students **lack** as they transition into middle school?
12. What are some of the advantages of having fifth-graders in elementary school **socially** - thinking about it in those terms, specifically, if you will?
13. What are the difficulties or challenges of having fifth-graders in middle school socially?

### **Enrollment**

*From the research, we have learned that when a school district undergoes a major transition (like the ReimaginED Initiative), enrollment shifts across buildings and the district as a whole.*

14. To what extent have the enrollment patterns changed in the last two and a half years?
15. What impacts have changes in enrollment had on **your building**?
  - a. What has this experience been like?
16. What differences did you notice between the first year of transition in 2021-2022 to the second year of the transition in 2022-2023?

### **Closing**

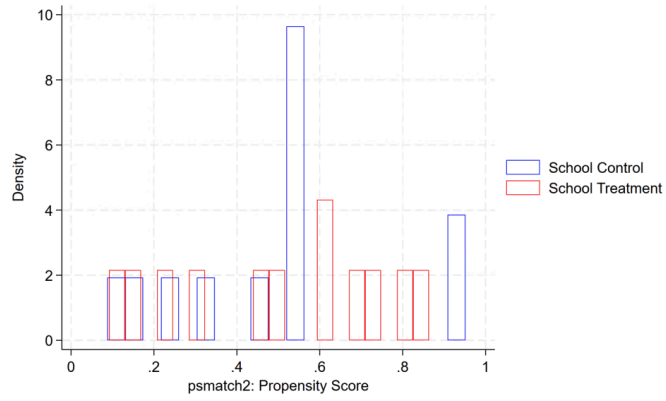
*Thank you for your time, before we wrap up this conversation, I have one final question.*

17. As you enter the 3rd year of this transition, what strengths do you see emerging?
  - a. What are the challenges you see emerging?
18. Is there anything else that you would like me to know?

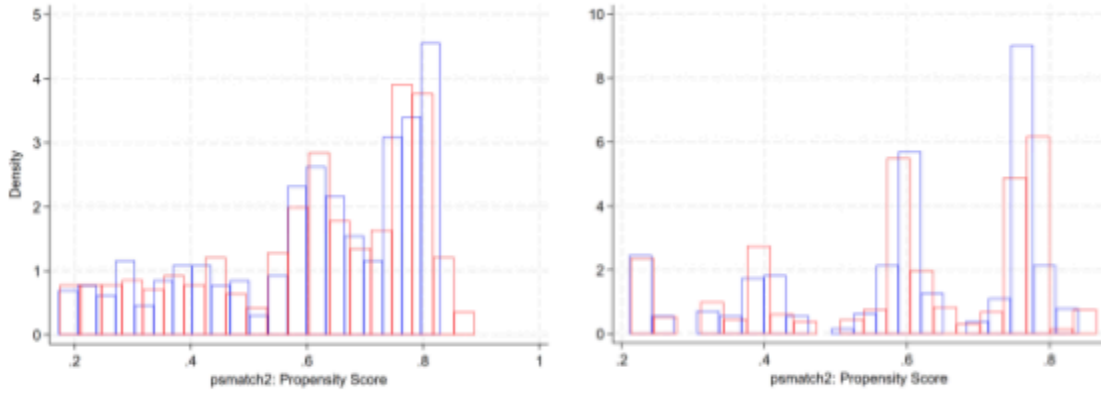
(Knott, 2023)

# Appendix C

## PSM Matched Schools

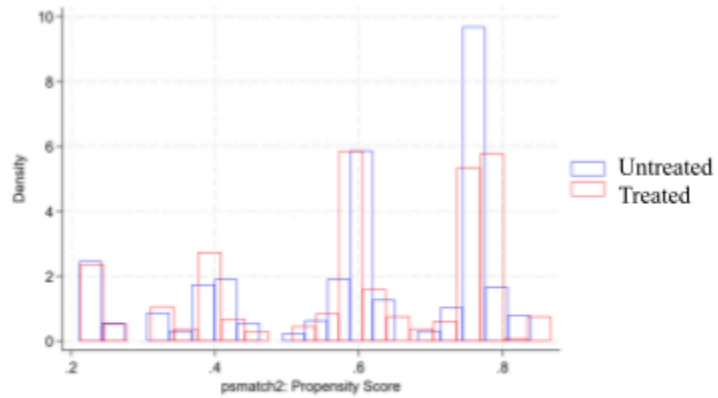


## PSM Matched Students Within Schools (ELA, Math, and Behavior)



Histogram of ELA Student Matches

Histogram of Math Student Matches



Histogram of Behavior Measures Student Matches

## Appendix D

*Table of Matched Schools*

	Treatment				Comparison				<i>t</i>	<i>p</i>
	Mean	SE	SD	N	Mean	SE	SD	N		
ELA Percentile	29.238	2.664	9.227	12	28.763	2.532	6.698	7	0.119	0.907
Math Percentile	24.160	2.049	7.097	12	26.295	3.079	8.146	7	0.600	0.557
Econ. Disad. Pct.	67.375	3.857	13.362	12	70.967	6.920	18.308	7	0.494	0.628
Black, Hisp., or Ind. Pct.	0.877	0.046	0.158	12	0.890	0.041	0.109	7	0.192	0.850
Unex. Abs. > 5 Pct.	0.699	0.045	0.155	12	0.718	0.058	0.154	7	0.258	0.799

*Table of Initial Match of Students*

	Treatment				Comparison				<i>t</i>	<i>p</i>
	Mean	SE	SD	N	Mean	SE	SD	N		
Black, Hisp., or Ind.	0.888	0.016	0.316	401	0.876	0.017	0.330	372	-0.492	0.623
Special Education	0.172	0.019	0.378	401	0.151	0.019	0.358	372	-0.812	0.417
English Lang. Learner	0.162	0.018	0.369	401	0.263	0.023	0.441	372	3.474	0.001
Unexcused Absences	16.020	0.847	16.963	401	13.914	0.802	15.471	372	-1.799	0.072
ELA Percentile	25.379	1.064	21.312	401	30.540	1.323	25.511	372	3.061	0.002
Math Percentile	22.938	0.946	18.944	401	24.809	1.054	20.327	372	1.325	0.186



## Appendix E

### MNPS School Characteristics

	2017-18	2018-19	2019-20	2020-21	<i>First Year of Transition</i> 2021-22
<i>Administrator Ratio</i>					
ReimaginED Y1 Schools	240	202	158	127	174
ReimaginED Y2 - Y4 Schools	275	283	250	198	196
ReimaginED Y1 Middle Schools	112	122	122	117	84
All Other Middle Schools	270	246	238	220	205
Whole District	246	244	226	207	201
<i>Teacher Ratio</i>					
ReimaginED Y1 Schools	14	12	12	10	11
ReimaginED Y2 - Y4 Schools	17	13	12	11	11
ReimaginED Y1 Middle Schools	18	15	13	12	11
All Other Middle Schools	23	16	16	14	14
Whole District	16	14	14	13	13
<i>Economically Disadvantaged</i>					
ReimaginED Y1 Schools	71.1%	70.4%	65.4%	68.1%	65.8%
ReimaginED Y2 - Y4 Schools	43.4%	40.5%	35.8%	36.8%	31.9%
ReimaginED Y1 Middle Schools	76.9%	75.6%	76.5%	75.2%	69.7%
All Other Middle Schools	45.4%	42.7%	39.1%	40.8%	34.6%
Whole District	46.9%	44.3%	39.7%	41.2%	35.0%
<i>Average School Size</i>					
ReimaginED Y1 Schools	298.5	279.7	265.1	254.3	304.1
ReimaginED Y2 - Y4 Schools	466.4	456.0	458.3	417.5	417.2
ReimaginED Y1 Middle Schools	307.8	273.5	273.8	379.5	274.8
All Other Middle Schools	578.3	590.9	589.6	565.4	527.8
Whole District	516.4	510.8	514.4	507.9	499.9

*Note.* Ratios calculated as the count of students divided by the count staff, rounded to the nearest whole number. Calculated from TDOE Data downloads. Economically Disadvantaged is calculated as the product of the Percent Economically Disadvantaged at the school level times and the count of students divided by the total count of students. Calculated from TDOE Data downloads.

## Appendix F

### Results Comparing Fourth Grade ReimaginED Cohort 1 School Students to Other Students

	ReimaginED			Traditional			t	p	Sig
	Mean	SD	N	Mean	SD	N			
<i>Student Characteristics</i>									
Female	0.510	0.85	641	0.489	0.061	4,762	-7.890	<0.001	***
Special Education	0.175	0.054	641	0.125	0.053	4,762	-22.231	<0.001	***
Black, Hisp., or Ind.	0.888	0.134	641	0.632	0.222	4,762	-28.478	<0.001	***
Econ. Disad. (x100)	68.175	12.162	641	39.308	14.193	4,574	-49.033	<0.001	***
English Lang. Learner	0.179	0.151	641	0.271	0.188	4,762	11.846	<0.001	***
<i>Academic Outcomes</i>									
Fall Reading BM	42.899	19.996	472	49.911	21.275	3,957	6.810	<0.001	***
Fall Math BM	38.763	20.366	461	47.540	21.320	3,947	8.403	<0.001	***
ELA Percentile	28.465	23.439	604	43.191	28.974	4,504	11.976	<0.001	***
Math Percentile	23.569	19.416	601	39.532	27.769	4,494	13.653	<0.001	***
<i>SEL Outcomes</i>									
Unexcused Abs.	15.711	16.618	641	7.144	11.521	4,762	-16.641	<0.001	***
OSS Days x 100	3.276	32.189	641	0.273	6.945	4,762	-5.552	<0.001	***
<i>Transfer Outcomes</i>									
In Year Transfers	0.123	0.329	641	0.079	0.270	4,762	-3.773	<0.001	***

\*\*\*  $p < .01$ , \*\*  $p < .05$

Note. Cohort 1 is all students enrolled in fourth-grade during the 2020-2021 school year. Each student was assigned the FRL percentage for their respective school. This comparison includes students who left the district after their fourth-grade year.

## Appendix G

### Fifth Grade English Language Arts Outcomes Linear Regression

ELA Percentile	Coefficient	St. Er.	t	p	[95% Conf Interval]	Sig
Student ReimaginED Y1	4.976	1.384	3.60	<0.001	2.263 7.689	***
<i>Accounting for Prior Outcome Variable Performance</i>						
L.ELA Percentile	0.407	0.018	23.21	<0.001	0.373 0.441	***
L.School ELA Percentile	-0.027	0.027	-1.00	0.319	-0.079 0.026	
Fall Read BM	0.511	0.022	23.73	<0.001	0.469 0.554	***
Fall School Read BM Avg.	0.722	0.105	6.85	<0.001	0.515 0.929	***
<i>Student Characteristics</i>						
Special Education	-2.678	0.786	-3.41	0.001	-4.220 -1.136	***
Black, Hisp., or Ind.	-3.236	0.698	-4.64	<0.001	-4.605 -1.868	***
English Lang. Learner	0.142	0.756	0.19	0.851	-1.340 1.624	
Unexcused Abs.	-0.116	0.035	-3.29	0.001	-0.184 -0.047	***
In Year Transfers	0.233	0.787	0.30	0.767	-1.310 1.776	
OSS Days	-0.135	0.274	-0.49	0.621	-0.672 0.402	
<i>School Characteristics</i>						
Special Education Pct.	21.732	6.946	3.13	0.002	8.113 35.352	***
Black, Hisp., or Ind. Pct.	10.614	3.370	3.15	0.002	4.006 17.221	***
Econ. Disadvantaged	-0.020	0.070	-0.29	0.774	-0.157 0.117	
ELL Pct.	18.059	4.479	4.03	<0.001	9.277 26.84	***
Pct. w/ >5 Unex. Abs.	-7.199	4.039	-1.78	0.075	-15.119 0.720	
Pct. w/ >1 Unex. Abs.	16.165	6.567	2.46	0.014	3.288 29.041	**
Pct. w/ In Year Transfer	11.029	6.065	1.82	0.069	-0.863 22.921	
Pct. w/ OSS Days	-9.785	4.747	-2.06	0.039	-19.092 -0.478	**
Constant	-49.86	10.46	-4.77	<0.001	-70.369 -29.351	***
Mean dependent var	40.350	SD dependent var	29.389			
R-squared	0.753	Number of obs	3132			
F-test	806.164	Prob > F	0.000			
Akaike crit. (AIC)	25722.540	Bayesian crit. (BIC)	25843.528			

\*\*\*  $p < .01$ , \*\*  $p < .05$

Note. Fall Reading Benchmark test (Fall Read BM) is provided as an NCE score. End of Year ELA scores are percentiles.

## Appendix H

### *Fifth and Sixth Grade English Language Arts Outcomes Linear Regression with Absorbing Indicator (School Year)*

ELA Percentile	Coefficient	St. Er.	t	p	[95% Conf Interval]	Sig
Student ReimaginED Y1	0.504	0.606	0.83	0.406	-0.685	1.692
<i>Accounting for Prior Outcome Variable Performance</i>						
L.ELA Percentile	0.369	0.011	33.87	<0.001	0.348	0.390 ***
L.School ELA Percentile	-0.128	0.021	-6.13	<0.001	-0.168	-0.087 ***
Fall Read BM	0.409	0.013	31.14	<0.001	0.384	0.435 ***
Fall School Read BM Avg.	0.150	0.058	2.60	0.009	0.037	0.263 ***
<i>Student Characteristics</i>						
Special Education	-3.729	0.507	-7.36	<0.001	-4.723	-2.736 ***
Black, Hisp., or Ind.	-2.037	0.436	-4.67	<0.001	-2.891	-1.182 ***
English Lang. Learner	-2.288	0.476	-4.80	<0.001	-3.222	-1.354 ***
Unexcused Abs.	-0.129	0.021	-6.09	<0.001	-0.171	-0.088 ***
In Year Transfers	-0.213	0.547	-0.39	0.697	-1.285	0.860
OSS Days	-0.148	0.095	-1.56	0.119	-0.334	0.038
<i>School Characteristics</i>						
Special Education Pct.	3.649	4.673	0.78	0.435	-5.512	12.81
Black, Hisp., or Ind. Pct.	0.715	2.004	0.36	0.721	-3.213	4.644
ELL Pct.	-1.900	2.222	-0.86	0.392	-6.255	2.455
Pct. w/ >5 Unex. Abs.	-7.580	2.731	-2.78	0.006	-12.933	-2.228 ***
Pct. w/ >1 Unex. Abs.	-10.685	4.986	-2.14	0.032	-20.459	-0.911 **
Pct. w/ In Year Transfer	5.474	3.456	1.58	0.113	-1.302	12.249
Pct. w/ OSS Days	1.209	2.597	0.47	0.641	-3.881	6.300
Constant	26.609	5.531	4.81	<0.001	15.766	37.452 ***
<hr/>						
Mean dependent var	44.911	SD dependent var	25.777			
R-squared	0.743	Number of obs	6257			
F-test	1120.542	Prob > F	0.000			
Akaike crit. (AIC)	49966.727	Bayesian crit. (BIC)	50094.815			

\*\*\*  $p < .01$ , \*\*  $p < .05$

Note. Fall Reading Benchmark test (Fall Read BM) is provided as an NCE score. End of Year ELA scores are percentiles.

## Appendix I

### Fifth Grade Math Outcomes Linear Regression

Math Percentile	Coefficient	St. Er.	t	p	[95% Conf Interval]	Sig
Student ReimaginED Y1	7.028	1.402	5.01	<0.001	4.278 9.777	***
<i>Accounting for Prior Outcome Variable Performance</i>						
L.Math Percentile	0.410	0.020	20.50	<0.001	0.371 0.449	***
L.School Math Percentile	-0.109	0.027	-4.10	<0.001	-0.161 -0.057	***
Fall Math Benchmark	0.473	0.023	20.20	<0.001	0.427 0.519	***
Fall School Math BM Avg.	0.596	0.098	6.08	<0.001	0.404 0.788	***
<i>Student Characteristics</i>						
Special Education	2.822	0.889	3.17	0.002	1.078 4.565	***
Black, Hisp., or Ind.	-2.215	0.698	-3.18	0.002	-3.583 -0.847	***
English Lang. Learner	0.786	0.743	1.06	0.291	-0.671 2.242	
Unexcused Abs.	-0.157	0.033	-4.73	<0.001	-0.223 -0.092	***
In Year Transfers	1.270	0.811	1.57	0.118	-0.321 2.861	
OSS Days	-0.394	0.295	-1.34	0.182	-0.972 0.184	
<i>School Characteristics</i>						
Special Education Pct.	-2.122	6.908	-0.31	0.759	-15.668 11.423	
Black, Hisp., or Ind. Pct.	10.258	3.345	3.07	0.002	3.698 16.817	***
Econ. Disad. (x100)	-0.093	0.070	-1.34	0.182	-0.230 0.043	
ELL Pct.	8.816	3.681	2.40	0.017	1.599 16.032	**
Pct. w/ >5 Unex. Abs.	11.339	4.505	2.52	0.012	2.506 20.173	**
Pct. w/ >1 Unex. Abs.	-1.933	6.131	-0.32	0.753	-13.954 10.088	
Pct. w/ In Year Transfer	-5.284	5.701	-0.93	0.354	-16.462 5.893	
Pct. w/ OSS Days	-9.440	4.850	-1.95	0.052	-18.948 0.069	
Constant	-22.503	8.592	-2.62	0.009	-39.350 -5.657	***
Mean dependent var	36.494	SD dependent var	27.861			
R-squared	0.726	Number of obs	3144			
F-test	653.243	Prob > F	0.000			
Akaike crit. (AIC)	25811.359	Bayesian crit. (BIC)	25932.425			

\*\*\*  $p < .01$ , \*\*  $p < .05$

Note. Fall Math Benchmark test (Fall Math BM) is provided as an NCE score. End of Year Math scores are percentiles.

## Appendix J

### *Fifth and Sixth Grade Math Outcomes Linear Regression with Absorbing Indicator (School Year)*

Math Percentile	Coefficient	St. Er.	t	p	[95% Conf Interval]	Sig
Student ReimaginED Y1	3.145	0.628	5.00	<0.001	1.913 4.377	***
<i>Accounting for Prior Outcome Variable Performance</i>						
L.Math Percentile	0.434	0.012	36.27	<0.001	0.410 0.457	***
L.School Math Percentile	-0.110	0.019	-5.88	<0.001	-0.146 -0.073	***
Fall Math BM	0.361	0.015	23.89	<0.001	0.331 0.390	***
Fall Sch. Math BM Avg.	0.507	0.060	8.45	<0.001	0.390 0.625	***
<i>Student Characteristics</i>						
Special Education	-0.457	0.535	-0.85	0.393	-1.506 0.592	
Black, Hisp., or Ind.	-2.109	0.434	-4.86	<0.001	-2.960 -1.258	***
English Lang. Learner	-0.731	0.473	-1.55	0.122	-1.658 0.195	
Unexcused Abs.	-0.15	0.021	-7.18	<0.001	-0.190 -0.109	***
In Year Transfers	0.357	0.541	0.66	0.510	-0.704 1.418	
OSS Days	-0.324	0.109	-2.99	0.003	-0.537 -0.112	***
<i>School Characteristics</i>						
Special Education Pct.	6.108	4.956	1.23	0.218	-3.609 15.824	
Black, Hisp., or Ind. Pct.	6.936	2.156	3.22	0.001	2.709 11.162	***
ELL Pct.	6.679	1.954	3.42	0.001	2.849 10.508	***
Pct. w/ >5 Unex. Abs.	4.111	2.948	1.39	0.163	-1.668 9.891	
Pct. w/ >1 Unex. Abs.	-19.762	4.946	-4.00	<0.001	-29.458 -10.066	***
Pct. w/ In Year Transfer	0.640	3.443	0.19	0.852	-6.109 7.390	
Pct. w/ OSS Days	-1.756	2.474	-0.71	0.478	-6.606 3.095	
Constant	5.594	5.395	1.04	0.300	-4.982 16.170	
Mean dependent var	40.667	SD dependent var	25.783			
R-squared	0.754	Number of obs	6302			
F-test	1440.422	Prob > F	0.000			
Akaike crit. (AIC)	50052.479	Bayesian crit. (BIC)	50180.703			

\*\*\*  $p < .01$ , \*\*  $p < .05$

Note. Fall Math Benchmark test (Fall Math BM) is provided as an NCE score. End of Year Math scores are percentiles.

## Appendix K

### Fifth Grade Unexcused Absences Linear Regression

Unexcused Absences	Coefficient	St. Er.	t	p	[95% Conf Interval]	Sig
Student ReimaginED Y1	-1.142	0.653	-1.75	0.080	-2.422 0.137	
<i>Accounting for Prior Outcome Variable Performance</i>						
L.Unexcused Abs.	0.346	0.017	19.80	<0.001	0.312 0.380	***
<i>Student Characteristics</i>						
Special Education	0.914	0.385	2.37	0.018	0.159 1.669	**
Black, Hisp., or Ind.	1.118	0.287	3.90	<0.001	0.556 1.680	***
English Lang. Learner	-1.997	0.311	-6.43	<0.001	-2.606 -1.388	***
In Year Transfers	2.556	0.452	5.65	<0.001	1.669 3.443	***
OSS Days	0.132	0.126	1.04	0.297	-0.116 0.379	
<i>School Characteristics</i>						
Special Education Pct.	0.946	2.603	0.36	0.716	-4.157 6.049	
Black, Hisp., or Ind. Pct.	-2.863	1.252	-2.29	0.022	-5.318 -0.408	**
Econ. Disad. (x100)	-0.020	0.028	-0.71	0.478	-0.076 0.036	
ELL Pct.	-0.357	0.978	-0.36	0.715	-2.275 1.561	
Pct. w/ >5 Unex. Absences	12.165	1.610	7.56	<0.001	9.008 15.322	***
Pct. w/ >1 Unex. Absences	-1.223	2.154	-0.57	0.570	-5.447 3.000	
Pct. w/ In Year Transfer	3.250	2.462	1.32	0.187	-1.577 8.078	
Pct. w/ OSS Days	-0.889	2.351	-0.38	0.705	-5.500 3.721	
Constant	0.609	1.453	0.42	0.675	-2.239 3.458	
Mean dependent var		7.354	SD dependent var		8.668	
R-squared		0.386	Number of obs		3547	
F-test		71.234	Prob > F		0.000	
Akaike crit. (AIC)		23684.886	Bayesian crit. (BIC)		23783.668	

\*\*\*  $p < .01$ , \*\*  $p < .05$

Note. Unexcused absences are a count of the total daily absences per student.

## Appendix L

### *Unexcused Absences Linear Regression with Absorbing Indicator (School Year)*

Unexcused Absences	Coefficient	St. Er.	<i>t</i>	<i>p</i>	[95% Conf Interval]	Sig
Student ReimaginED Y1	-0.979	0.352	-2.78	0.005	-1.669 -0.289	***
<i>Accounting for Prior Outcome Variable Performance</i>						
L.Unexcused Abs.	0.434	0.016	26.51	<0.001	0.402 0.466	***
<i>Student Characteristics</i>						
Special Education	0.366	0.259	1.41	0.158	-0.142 0.873	
Black, Hisp., or Ind.	0.870	0.186	4.67	<0.001	0.505 1.235	***
English Lang. Learner	-1.259	0.227	-5.54	<0.001	-1.704 -0.813	***
In Year Transfers	2.013	0.343	5.87	<0.001	1.340 2.685	***
OSS Days	0.213	0.082	2.60	0.009	0.053 0.374	***
<i>School Characteristics</i>						
Special Education Pct.	-0.016	1.989	-0.01	0.994	-3.915 3.884	
Black, Hisp., or Ind. Pct.	-3.322	0.714	-4.65	<0.001	-4.722 -1.922	***
ELL Pct.	0.044	0.702	0.06	0.949	-1.331 1.420	
Pct. w/ >5 Unex. Abs.	11.082	1.143	9.69	<0.001	8.841 13.323	***
Pct. w/ >1 Unex. Abs.	-0.844	1.923	-0.44	0.661	-4.614 2.927	
Pct. w/ In Year Transfer	0.812	1.655	0.49	0.624	-2.432 4.056	
Pct. w/ OSS Days	-1.544	1.388	-1.11	0.266	-4.265 1.177	
Constant	0.618	1.267	0.49	0.626	-1.865 3.102	
Mean dependent var		7.082	SD dependent var		8.573	
R-squared		0.412	Number of obs		6901	
F-test		131.030	Prob > F		0.000	
Akaike crit. (AIC)		45602.019	Bayesian crit. (BIC)		45704.611	

\*\*\*  $p < .01$ , \*\*  $p < .05$

Note. Unexcused absences are a count of the total daily absences per student.



## Appendix M

### Fifth Grade OSS Days Linear Regression

Total Days of OSS	Coefficient	St. Er.	t	p	[95% Conf Interval]	Sig
Student ReimaginED Y1	0.078	0.111	0.70	0.483	-0.139 0.294	
<i>Accounting for Prior Outcome Variable Performance</i>						
L.OSS Days	0.603	0.226	2.67	0.008	0.160 1.046	***
<i>Student Characteristics</i>						
Special Education	0.180	0.071	2.54	0.011	0.041 0.320	**
Black, Hisp., or Ind.	0.241	0.037	6.44	<0.001	0.168 0.315	***
English Lang. Learner	-0.127	0.037	-3.44	0.001	-0.200 -0.055	***
In Year Transfers	0.085	0.074	1.15	0.250	-0.060 0.229	
Unexcused Abs.	0.015	0.004	4.14	<0.001	0.008 0.022	***
<i>School Characteristics</i>						
Special Education Pct.	-0.199	0.427	-0.47	0.641	-1.036 0.638	
Black, Hisp., or Ind. Pct.	-0.486	0.184	-2.63	0.008	-0.847 -0.124	***
Econ. Disad. (x100)	-0.004	0.005	-0.78	0.433	-0.013 0.006	
ELL Pct.	0.201	0.129	1.56	0.119	-0.051 0.453	
Pct. w/ >5 Unex. Abs.	0.139	0.241	0.58	0.563	-0.333 0.611	
Pct. w/ >1 Unex. Abs.	0.142	0.351	0.40	0.686	-0.547 0.830	
Pct. w/ In Year Transfer	0.187	0.365	0.51	0.608	-0.529 0.903	
Pct. w/ OSS Days	3.379	0.539	6.27	<0.001	2.322 4.436	***
Constant	-0.110	0.241	-0.46	0.647	-0.583 0.362	
<hr/>						
Mean dependent var	0.253	SD dependent var		1.147		
R-squared	0.087	Number of obs		3547		
F-test	8.482	Prob > F		0.000		
Akaike crit. (AIC)	10742.453	Bayesian crit. (BIC)		10841.235		

\*\*\* p <.01, \*\* p <.05

Note. OSS Days are a count of total OSS days and not a count of unique or discrete events.

## Appendix N

### OSS Days Linear Regression with Absorbing Indicator (School Year)

Total Days of OSS	Coefficient	St. Er.	t	p	[95% Conf Interval]	Sig
Student ReimaginED Y1	0.279	0.107	2.59	0.010	0.068	0.489 ***
<i>Accounting for Prior Outcome Variable Performance</i>						
L.OSS Days	0.542	0.069	7.91	<0.001	0.408	0.676 ***
<i>Student Characteristics</i>						
Special Education	0.016	0.058	0.27	0.787	-0.098	0.129
Black, Hisp., or Ind.	0.242	0.031	7.79	<0.001	0.181	0.303 ***
English Language Learner	-0.108	0.044	-2.45	0.014	-0.195	-0.022 **
In Year Transfers	0.134	0.077	1.74	0.082	-0.017	0.284
Unexcused Absences	0.017	0.004	4.62	<0.001	0.010	0.024 ***
<i>School Characteristics</i>						
Special Education Pct.	-0.454	0.362	-1.25	0.210	-1.164	0.256
Black, Hisp., or Ind. Pct.	-0.871	0.179	-4.87	<0.001	-1.222	-0.521 ***
ELL Pct.	0.442	0.164	2.69	0.007	0.120	0.764 ***
Pct. w/ >5 Unex. Absences	-0.041	0.232	-0.18	0.861	-0.495	0.413
Pct. w/ >1 Unex. Absences	0.527	0.366	1.44	0.150	-0.190	1.244
Pct. w/ In Year Transfer	0.147	0.287	0.51	0.609	-0.415	0.708
Pct. w/ OSS Days	4.189	0.433	9.67	<0.001	3.339	5.038 ***
Constant	-0.371	0.236	-1.57	0.116	-0.833	0.092
Mean dependent var	0.413	SD dependent var				1.602
R-squared	0.175	Number of obs				6901
F-test	24.416	Prob > F				0.000
Akaike crit. (AIC)	24793.152	Bayesian crit. (BIC)				24895.743

\*\*\*  $p < .01$ , \*\*  $p < .05$

Note. OSS Days are a count of total OSS days and not a count of unique or discrete events.

## Appendix O

### Results Comparing Cohort 1 Fifth Grade ReimaginED Schools to Traditional Schools

	ReimaginED			Traditional			<i>t</i>	<i>p</i>	<i>Sig</i>
	<i>Mean</i>	<i>SD</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>N</i>			
<i>School Characteristics</i>									
School Size	304.083	73.004	12	578.552	169.222	29	5.384	<0.001	***
<i>Student Characteristics</i>									
Female	0.519	0.083	12	0.494	0.380	29	-1.323	0.193	
Special Education	0.198	0.078	12	0.138	0.055	29	-2.787	0.008	***
Black, Hisp., or Ind.	0.881	0.158	12	0.698	0.204	29	-2.774	0.009	***
Econ. Disad. (x100)	65.333	13.282	12	36.103	11.724	29	-6.989	<0.001	***
English Lang. Learner	0.141	0.139	12	0.208	0.187	29	1.116	0.271	
<i>Academic Outcomes</i>									
Fall Reading BM	33.026	6.317	12	41.944	11.248	29	2.572	0.014	**
Fall Math BM	27.093	6.887	12	38.245	11.385	29	3.149	0.003	***
ELA Percentile	28.102	8.621	12	23.731	15.477	29	2.439	0.019	**
Math Percentile	25.432	10.212	12	35.467	14.886	29	2.129	0.040	**
<i>SEL Outcomes</i>									
Pct. w/ >5 Unex. Abs.	0.721	0.152	12	0.514	0.151	29	-3.992	<0.001	***
Pct. w/ >1 Unex. Abs.	0.977	0.022	12	0.890	0.069	29	-4.253	<0.001	***
Pct. w/ OSS Days	0.098	0.113	12	0.095	0.097	29	-0.088	0.931	
St.-Teacher Relat.	4.143	0.311	12	4.093	0.234	29	-0.568	0.573	
St.-St. Relat.	3.226	0.475	12	3.357	0.311	29	1.048	0.301	
Academic Press	4.411	0.183	12	4.284	0.132	29	-2.465	0.017	**
School Engagement	3.673	0.276	12	3.575	0.136	29	-1.521	0.136	
Belonging	3.700	0.275	12	3.707	0.337	29	0.068	0.946	
<i>Transfer Outcomes</i>									
Pct. w/ In Year Transfer	0.188	0.078	12	0.155	0.080	29	-1.226	0.228	

\*\*\* *p* <.01, \*\* *p* <.05

Note. Cohort 1 is all students enrolled in fifth-grade during the 2021-2022 school year.

## Appendix P

### Descriptive Statistics for Fourth and Fifth Grade Students who Transferred compared with those Who Remained in District (Year 2020-2021)

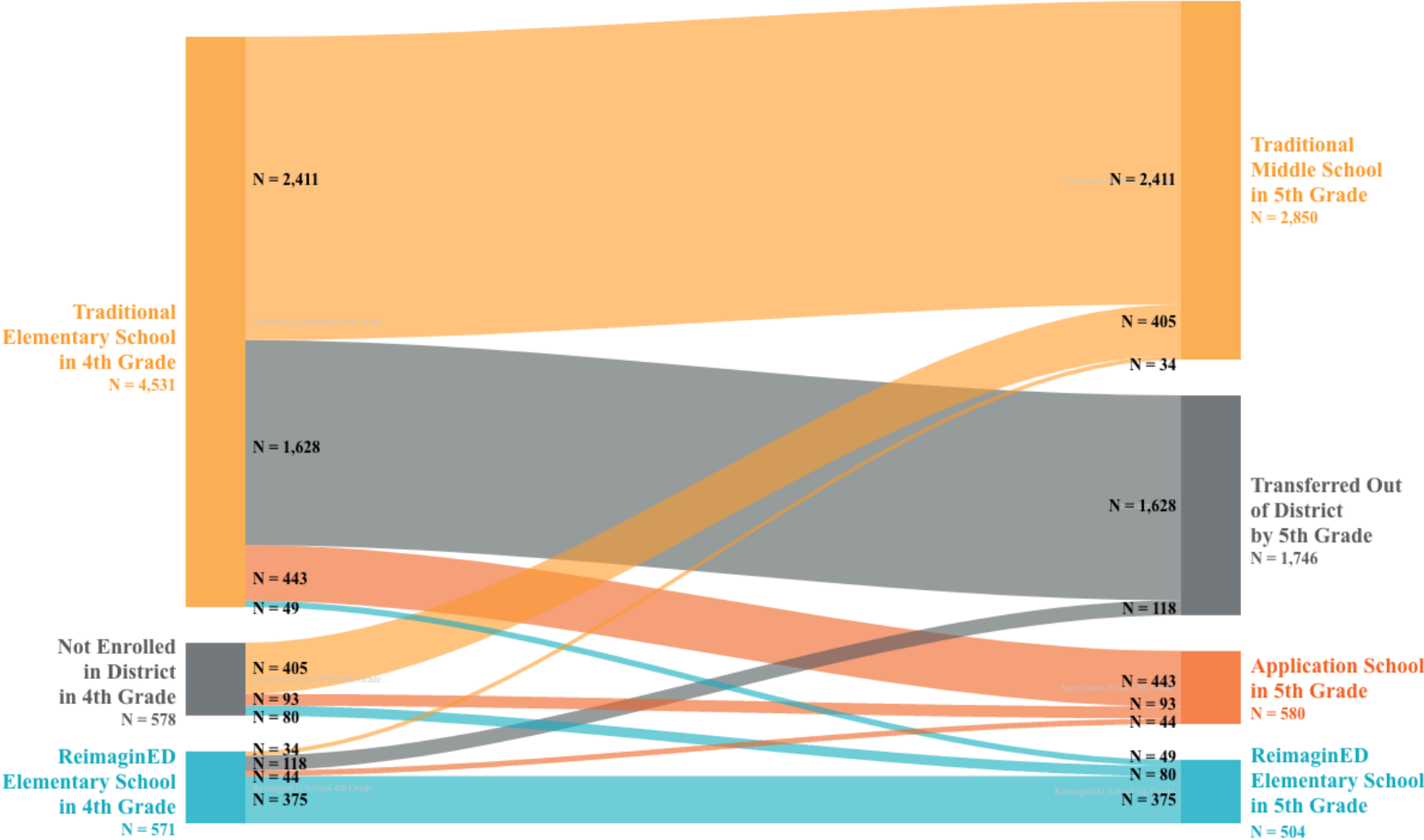
Variable	Transferred			Remained			t	p	Sig
	Mean	SD	N	Mean	SD	N			
<i>Student Characteristics</i>									
Female	0.484	0.500	1,759	0.493	0.500	3,807	0.620	0.533	
Special Education	0.115	0.320	1,759	0.141	0.348	3,807	2.647	0.008	***
Black, Hisp., or Ind.	0.608	0.488	1,759	0.688	0.463	3,807	5.901	<0.001	***
English Lang. Learner	0.288	0.453	1,759	0.252	0.434	3,807	-2.841	0.005	***
<i>Academic Outcomes</i>									
ELA Percentile	43.877	28.351	1,661	39.788	28.817	3,581	-4.804	<0.001	***
Math Percentile	39.423	27.360	1,660	36.335	27.269	3,570	-3.808	0.001	***
<i>SEL Outcomes</i>									
Unexcused Abs.	6.267	10.654	1,759	8.952	13.128	3,807	7.509	<0.001	***
OSS Days x 100	0.341	7.534	1,759	0.762	14.569	3,807	1.142	0.253	
<i>Treatment</i>									
School ReimaginED	0.067	0.250	1,759	0.142	0.350	3,807	8.100	<0.001	***
Y1			1,759			3,807			

\*\*\*  $p < .01$ , \*\*  $p < .05$

Note. This table summarizes the student-level dataset in fourth grade in 2020-2021, comparing students enrolled during their fourth-grade year who transferred by their fifth-grade year to students who remained in MNPS.

## Appendix Q

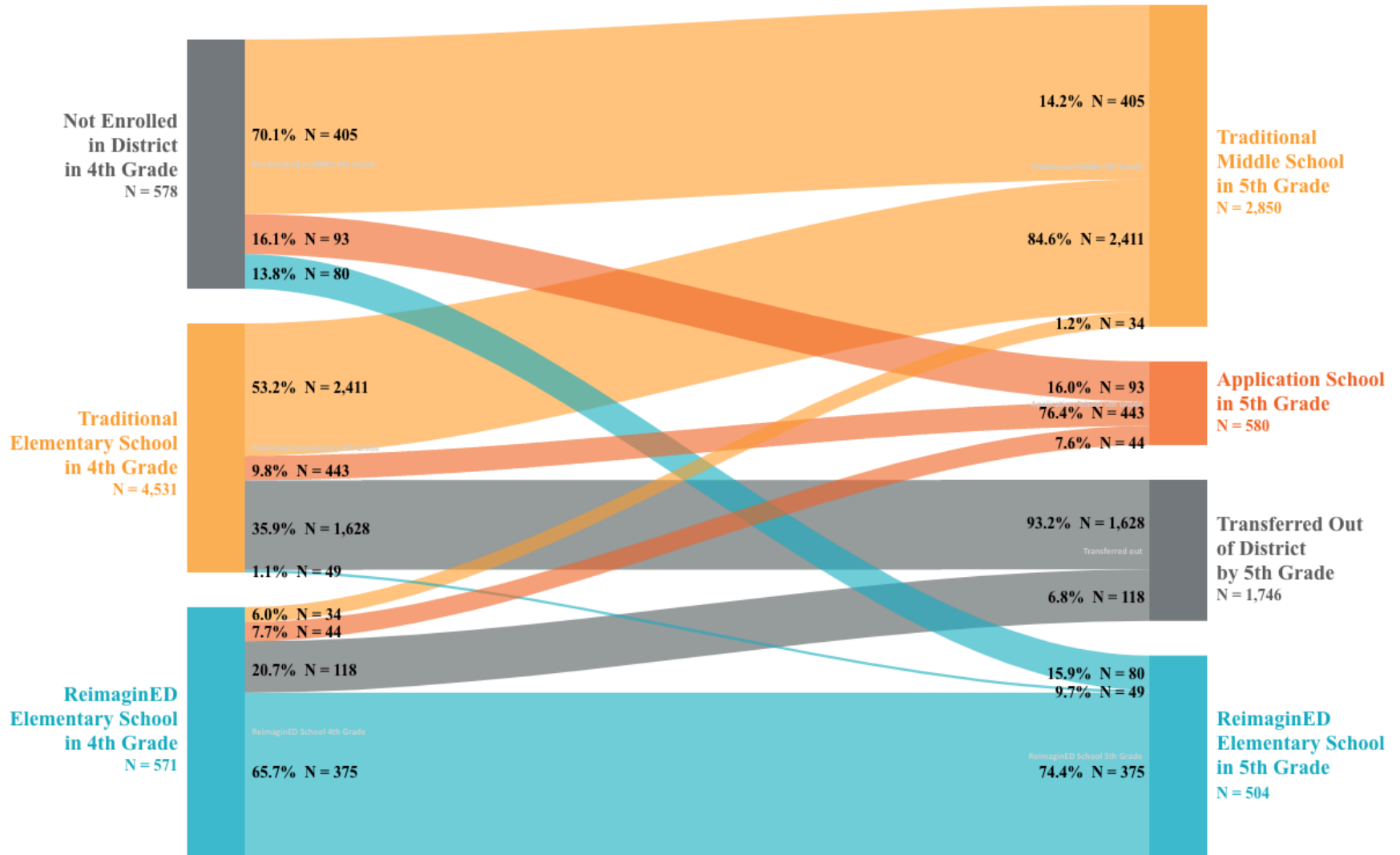
*Sankey Diagram of Population Flow of Students between Fourth and Fifth Grade students between 2021 and 2022*



Note. This chart is a measure of common students between years. This does not necessarily reflect the overall population in fourth and fifth-grades.

## Appendix R

*Sankey Diagram of Population Flow Percentage between Fourth and Fifth Grade Students between 2021 and 2022*



Note. This chart is a measure of common students between years. This does not necessarily reflect the overall population in fourth and fifth-grades. Bands are weighted by percent by setting of the fourth-grade population.

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