Chapin Hall Supplemental Brief

Instructional Diagnostics and Review of School Climate data

St. Charles Community Unit School District 303

Click or tap here to enter text.

Kiljoong Kim, Ph.D.

July 2022

CHAPIN HALL
AT THE UNIVERSITY OF CHICAGO

Introduction

Upon determination of achievement gaps by race/ethnicity, gender, and socioeconomic status, Chapin Hall has conducted additional diagnostics to provide more in-depth information. Additional materials considered for this analysis include the iReady Assessment and school climate survey by Panorama. The purpose of a diagnostic assessment is to gauge what students retained from previous instruction and to identify where the gaps are. At the aggregate level, it can also be used to derive differentiation strategies or identify students who may need additional support or intervention. In addition, the impact of school climate has been well documented over the years (Baker, 2021; Lombardi et al., 2019; Mulyadi & Sudibjo, 2018; Payne, 2018), and its role has been magnified in recent years with increased concerns over student well-being (Grooms & Childs, 2021; Ladson-Billings, 2021; O'Keeffe & McNally, 2021).

First, using Fall to Spring results in iReady Assessment for Reading and Math during SY2021, relationships between the growth in Percentile Ranking (PR) and the foundational sub-test areas (vocabulary in reading and algebra and algebraic thinking in math) are explored. The significant role of vocabulary that leads to reading comprehension and overall reading skills has been found in a number of studies (Daugaard, Cain, & Elbro, 2017; Mokhtari & Niederhauser, 2013; Ouellette, 2006; Protopapas, Mouzaki, Sideridis, Kotsolakou, & Simos, 2013). Similarly, several studies have pointed out that algebra and algebraic thinking are significant predictors of overall math scores (Blanton et al., 2015; Pourdavood, McCarthy, & McCafferty, 2020). In the spirit of diagnostics, the growth, or lack of growth, in foundations would: 1) determine the next steps in instruction, whether they'd be reinforcing foundations or application of newly acquired

foundations; and 2) provide guidance on grouping strategies based on most recent information about the students.

Second, using Panorama's student survey on Supports and Environment, two scales were considered to gauge school climate for high school students: Teacher-Student Relationships and Sense of Belonging. Student surveys are an important structured way of gathering student voice. Research suggests that listening to student voice enables a more insightful approach to educational research and practice (Bourke & Loveridge, 2018; Duffy & Watts, 2021; Mayes, Black, & Finneran, 2021; Mitra, 2018).

Findings

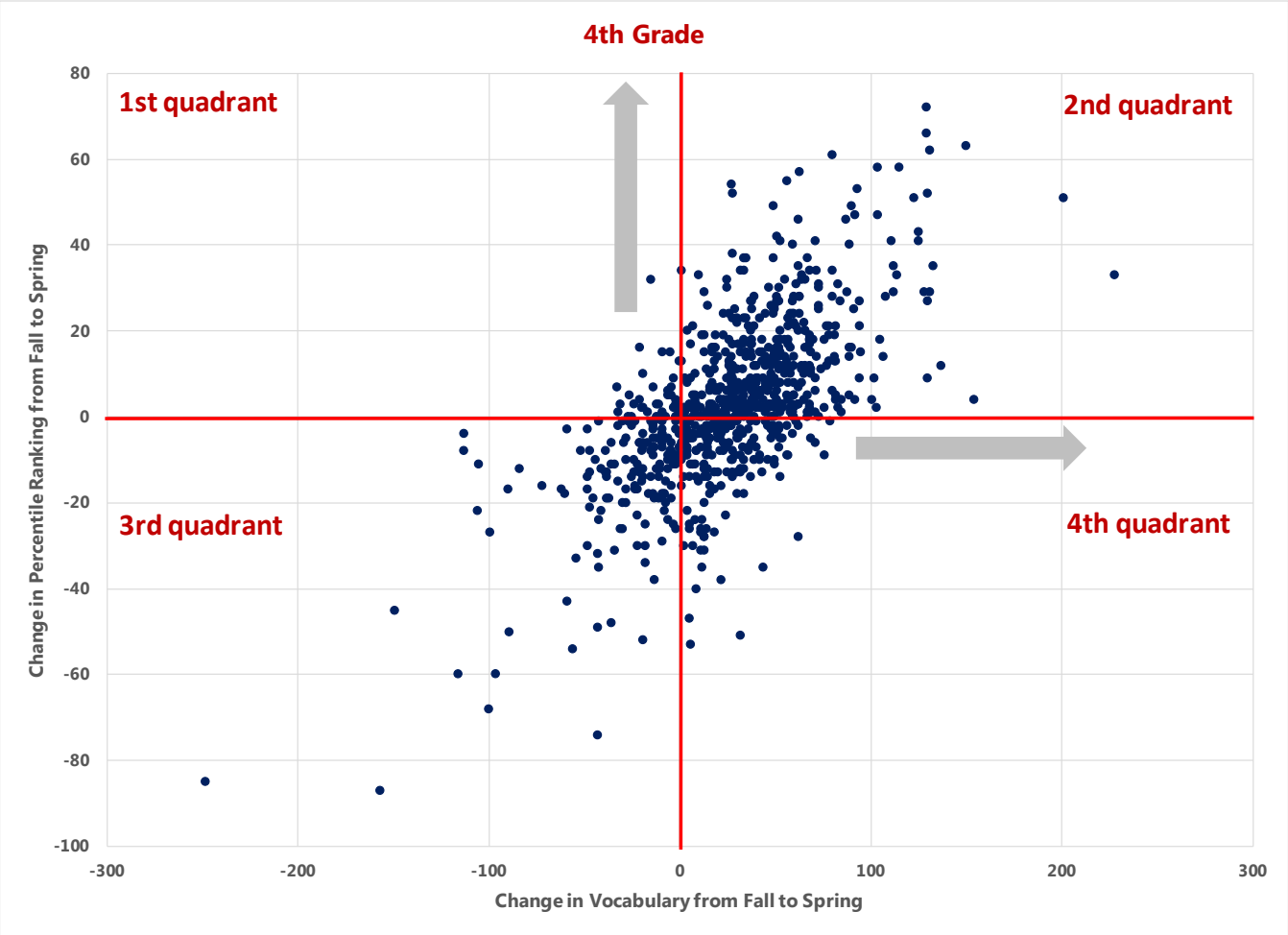
iReady Assessment - Background

It is important to note that the iReady assessment is an adaptive assessment based on a student's response to the previous question. This means that students are exposed to a different set of items at varying levels of difficulty tailored to their abilities in each subject. Due to this adaptive nature and the assessment designed for students to respond correctly to 50% of the questions, the scores vary depending on grade level. Instead, the scale score for iReady Assessment in Reading can range from upper 200s to lower 700s. Based on the scale scores, the Percentile Ranking (PR) is determined for each grade level and norming windows (Fall, Winter, and Spring).

iReady Assessment - Reading

To perform diagnostics, using 4th grade Reading as an example, Figure 1 shows four possible quadrants for the relationship between the growth in overall reading score expressed in Percentile Ranking (PR) on the vertical axis and the growth in vocabulary expressed in scale score in horizontal axis with each dot representing a 4th grade student who was enrolled in the district for the entire school year.

Figure 1. Relationship between Change in Vocabulary and Change in Overall Scale Score



The focal point in this diagnostics is the 2nd quadrant, composed of students who experienced growth in vocabulary and percentile ranking growth. In this best-case scenario, an improvement in foundations leads to overall reading skills. The 4th quadrant, which includes students whose growth in vocabulary did not lead to growth in percentile ranking, indicates an improvement in foundational skills that did not translate to improvement in overall scores. This pattern often indicates that students are struggling with reading comprehension. The instructional goals using this concept would be to minimize the number or proportion of students in the 3rd quadrant; maximize in the 2nd quadrant; perform further diagnostics on those students in the 4th quadrant.

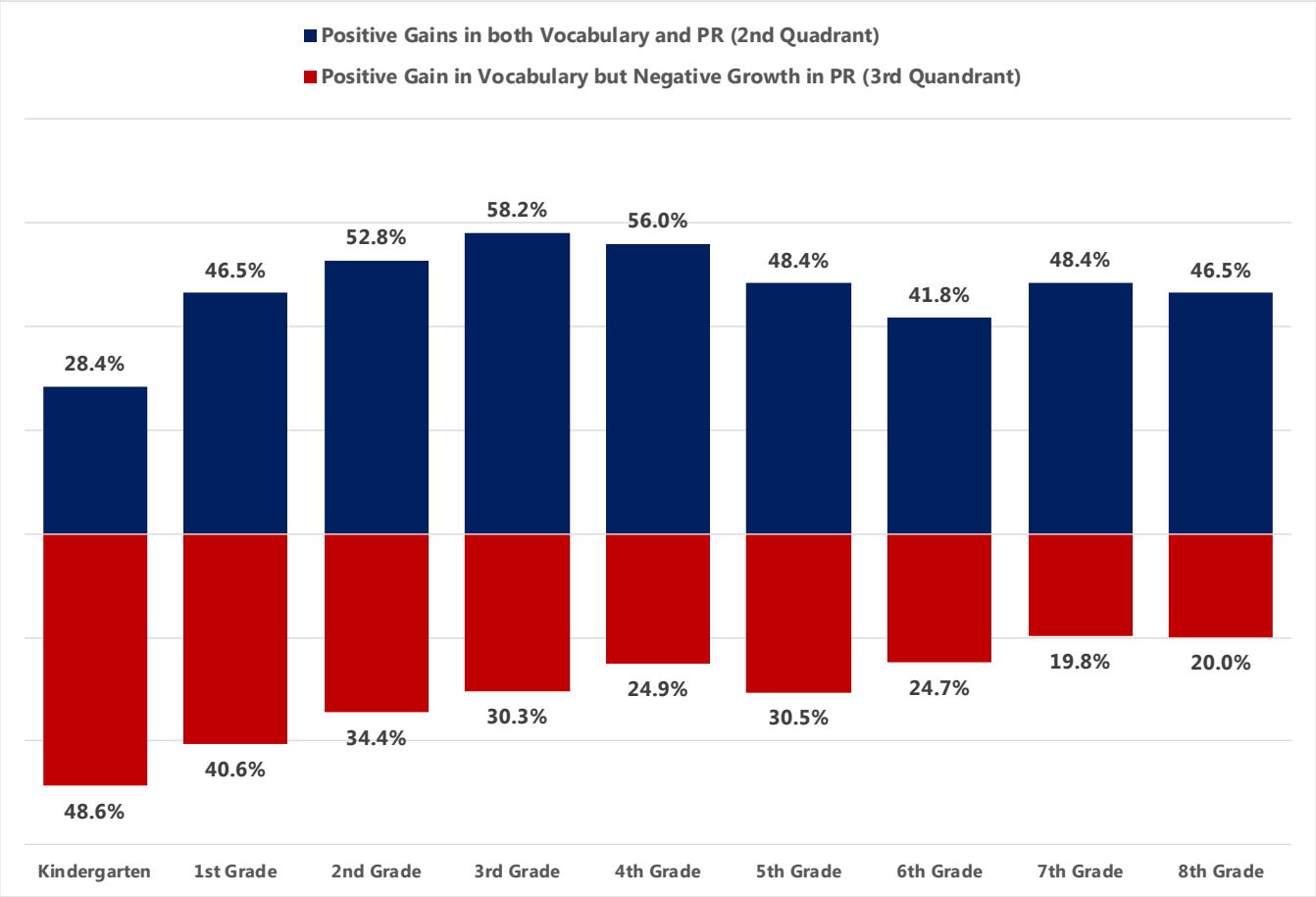
In the case of 4th grade, the majority of the students (56%) experienced growth in vocabulary and overall reading scores (2nd quadrant). At the same time, 1 out of 4 students (24.9%) grew in vocabulary but did not yield improvement in overall reading scores. Another notable result among 4th grade students is the wide range of decline in overall reading scores (3rd quadrant)

among a handful of students. Given these findings, there are three strategic recommendations in reading for 4th grade moving forward:

1. The majority of the students are ready for the next iteration of the reading improvement cycle, beginning with higher-level vocabulary.
2. Some students could benefit from skills related to reading comprehension (4th quadrant).
3. Those students with a large decline may be dealing with non-academic issues. In this case, additional intervention in Social Emotional Learning (SEL) may be needed before focusing on academics.

For those students in the 2nd quadrant, further diagnostics to gauge skills geared toward fiction (e.g. character development) versus nonfiction (e.g. summarizing information) are suggested. The scatter plots for other grade levels for reading are included in Appendix A. Figure 2 displays a summary by grade level of the percentages in the 2nd and 4th quadrants. While 4th grade had the most balanced school year in reading, greater proportions of 6th and 8th grade students could benefit from exposure to more vocabulary. Large proportions of 3rd and 5th grade students could benefit from closer and more frequent monitoring of reading comprehension (e.g., Lexile or levels). While diagnostics are helpful in instructional planning, it is important to note that the merits of using assessment data for primary grades for such purposes have been in question for quite some time (Daly III, Wright, Kelly, & Martens, 1997; Marston et al., 2007; VanDerHeyden, Witt, Naquin, & Noell, 2001).

Figure 2. Distribution of Progress in Reading by Grade Level



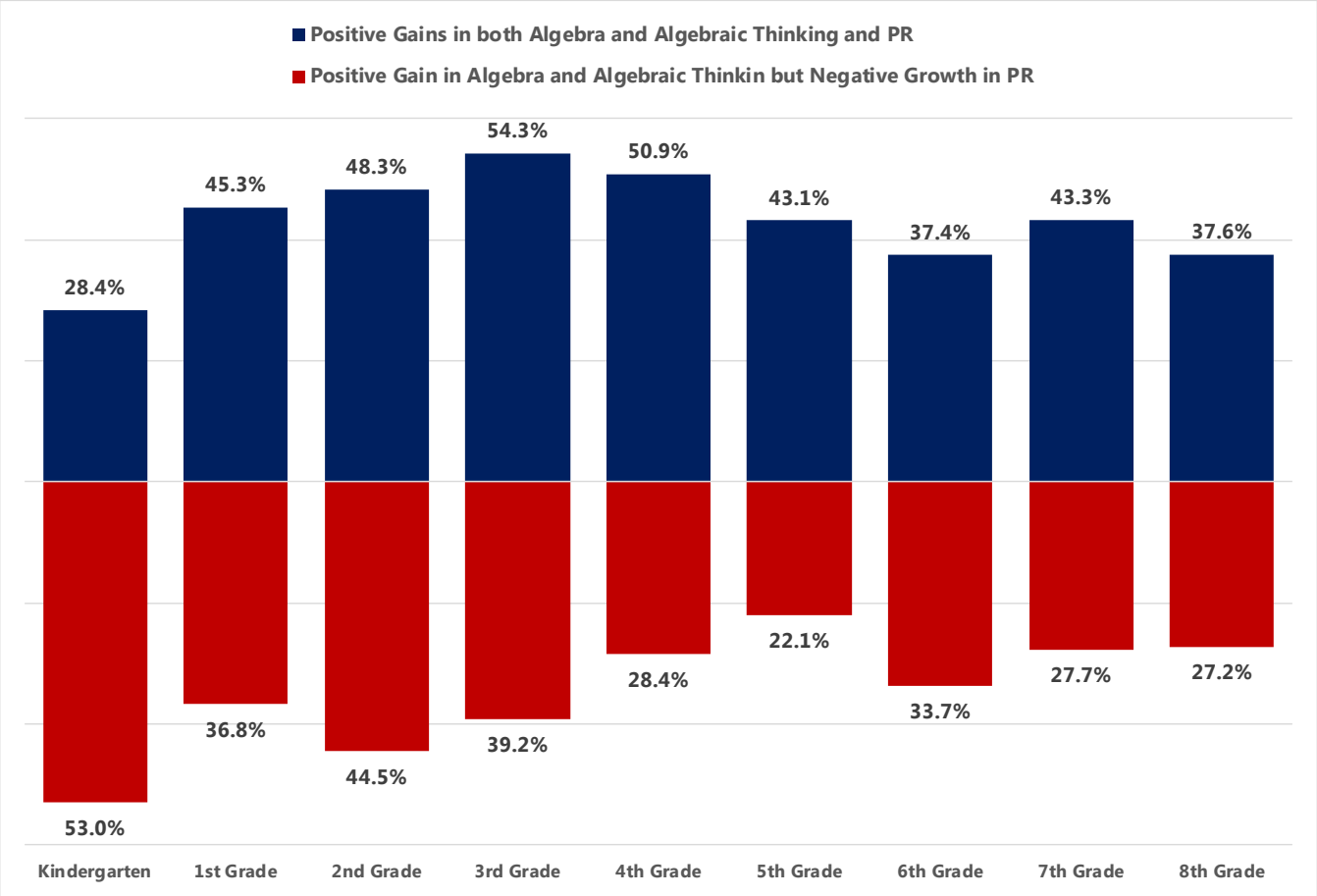
iReady Assessment – Mathematics

Similar diagnostics can be conducted in mathematics using Algebra and algebraic thinking as its foundation in place of vocabulary in reading. As was the case in reading, the 2nd quadrant indicates the ideal progress made during the school year.

Those students in the 4th quadrant would indicate little to no progress in overall math scores despite progressing in foundational skills. In most instances, this pattern occurs when students experience a lack of exposure to application. For example, 3rd grade data has shown that nearly two out of five students (39.2%) did not improve their overall math scores despite showing growth in algebra and algebraic thinking. The next step in their progress would be to provide them with opportunities to apply the skills they have acquired to solve problems in various contexts. The scatter plots for other grade levels for mathematics are included in Appendix B.

Conversely, slightly over a third of the 6th and 8th grade students made progress in both algebra and algebraic thinking and overall math scores, which implies that most of the students could benefit from reinforcement of foundational concepts. A number of mathematics curricula use a spiral approach to address this issue, which allows for revisiting concepts repeatedly over time or across grades.

Figure 3. Distribution of Progress in Mathematics by Grade Level

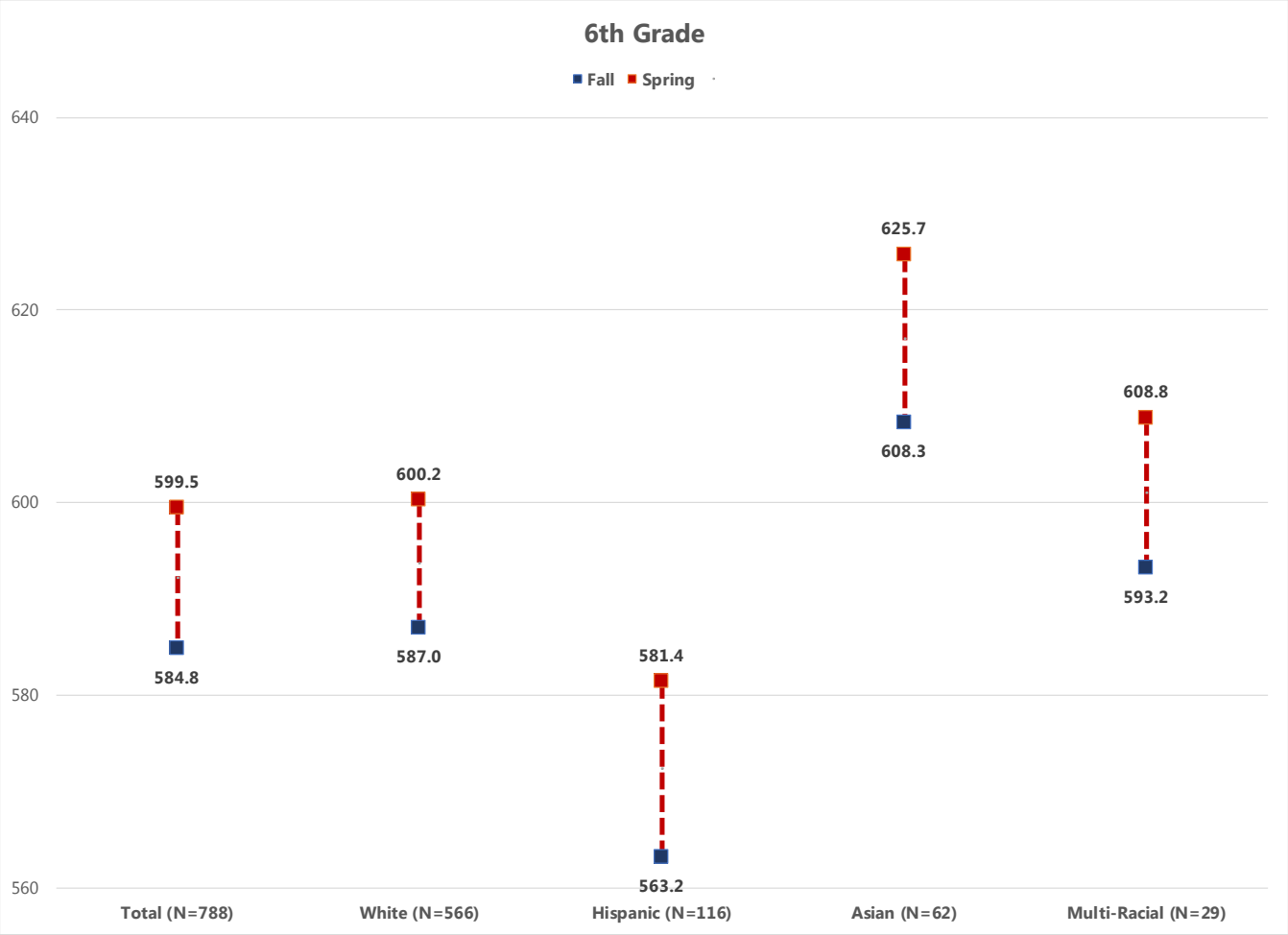


Achievement Gap

The patterns of achievement gap detected in the summative assessment (IAR) by race/ethnicity are also detected in the changes over time in the iReady Assessment. On average, the entire year's worth of growth among Hispanic students was not only insufficient to narrow the gaps, in some grade levels, their end-of-the-year averages were lower than that of the beginning of the year for White or Asian students. While IAR results disclose a static point-in-time gap, the gap shown through the iReady Assessment indicates how the achievement gap can be exacerbated over time.

Figure 4 is an example of such a scenario in 6th grade reading. The change in scale score from Fall to Spring by race/ethnicity is included in Appendix C and D.

Figure 4. Changes in Average Scale Score by Race/Ethnicity



Panorama's student survey on Supports and Environment - Teacher-Student Relationships

In recent years, research has suggested that early adolescent boys and girls (ages 10–14) both benefit from high-quality teacher–student relationships (Uslu & Gizir, 2017) and that students with high-quality relationships with teachers experience increased academic achievement (Valiente, Parker, Swanson, Bradley, & Groh, 2019) and reduced psychological symptoms (Longobardi, Settanni, Prino, Fabris, & Marengo, 2019). One study that explicitly tested for the role of gender in student-teacher relationships did not find a significant difference (Johnson, Tyacke, & Marshall, 2021).

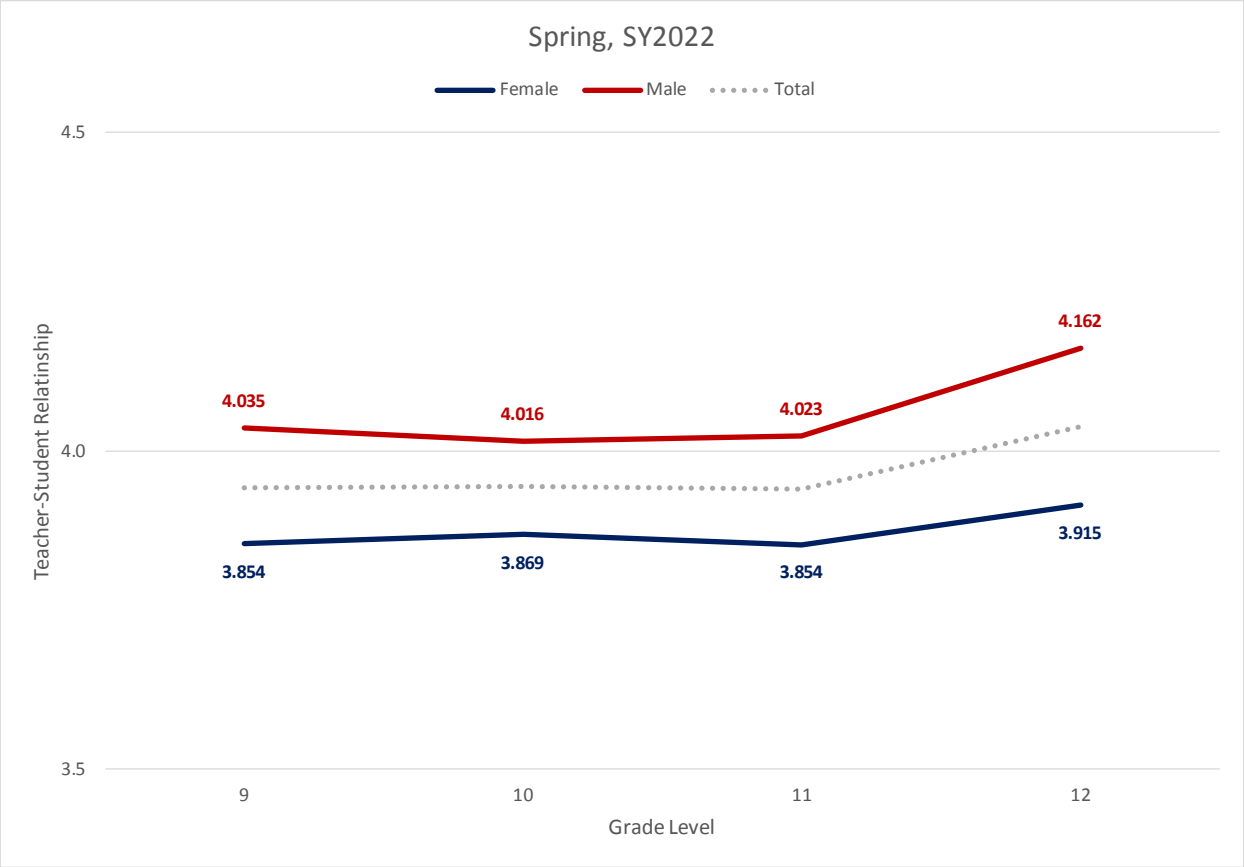
The questions in the survey consist of 5 items on student perception of their teachers (Table 1) with response options None of my teachers, A few of my teachers, About half of my teachers, Most of my teachers, and All of my teachers.

Table 1. Teacher-Student Relationships Items in Student Survey on Supports and Environment

How many of your teachers are respectful towards you?
If you walked into class upset, how many of your teachers would be concerned?
If you came back to visit class three years from now, how many of your teachers would be excited to see you?
When your teachers ask how you are doing, how many of them are really interested in your answer?
How many of your teachers would you be excited to have again in the future?

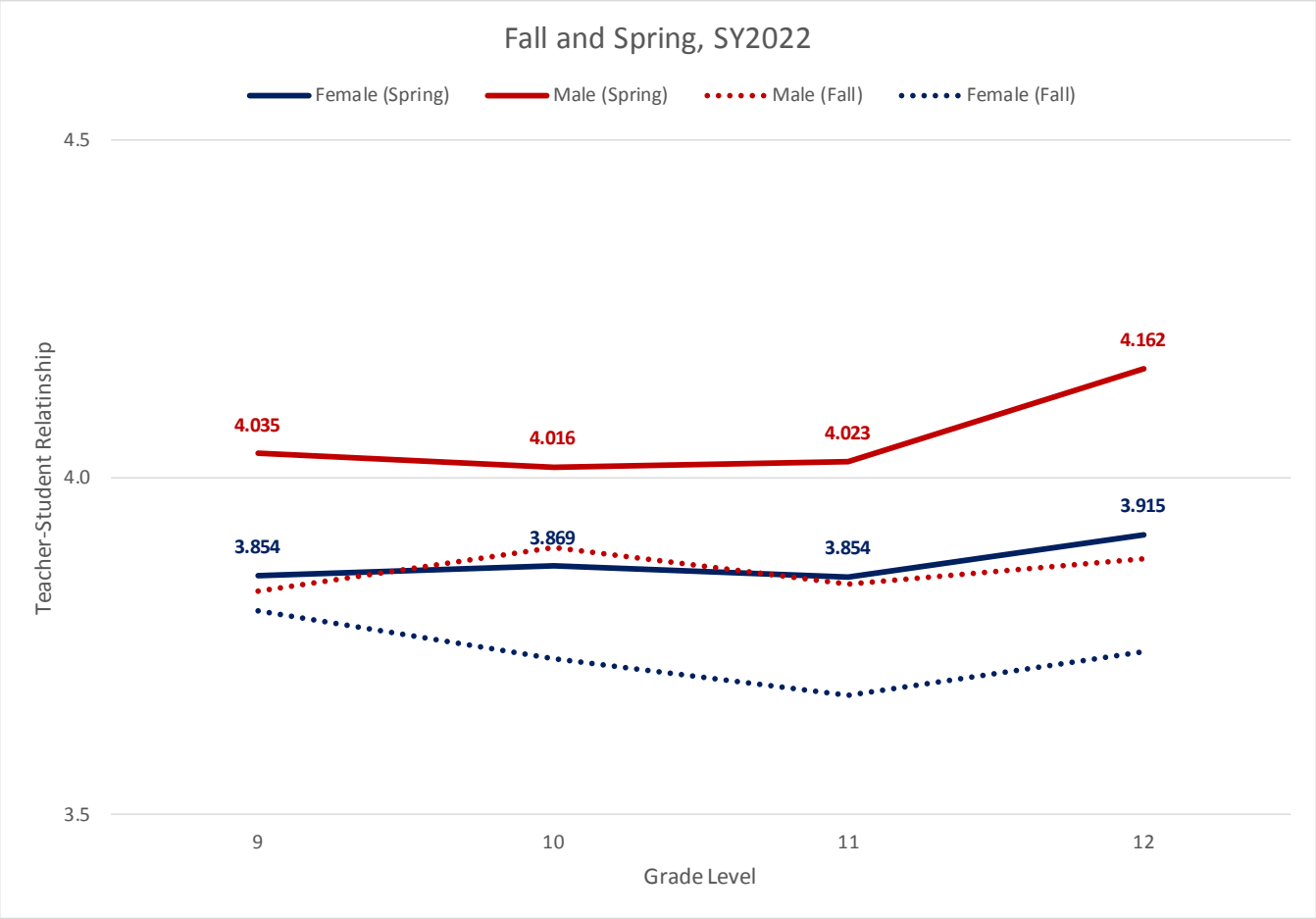
In St. Charles CUSD 303, the student survey results during SY2022 indicated the opposite of recent studies. The most notable finding in teacher-student relationships was among high school students, where gender was a significant factor - male students showed significantly higher scores than female students (Figure 5).

Figure 5. Teacher-Student Relationship by Gender



In the case of the 9th and 12th grades, there was a minimal gap at the baseline in the fall but the gap widened during the school year (Figure 6).

Figure 6. Fall and Spring Teacher-Student Relationship by Gender



Furthermore, the variation in the teacher-student relationship had no significant impact on academic performance. However, this impact on academic performance was only tested against assessment results (SAT) and could yield different results if tested with other academic indicators, including GPA or graduation rate.

Though not as consistently impactful across grade levels as gender, there were few additional notable findings. In 4th and 11th grades, Black students experienced a significantly lower level of growth in a teacher-student relationship compared to white students. Similarly, stagnant growth was detected among multi-racial students as well as among 4th and 6th grade students and IEP students.

Panorama's student survey on Supports and Environment – Sense of Belonging

Research has found that students with a lower level of engagement in learning and schooling may experience lower levels of a sense of belonging at school (Pendergast, Allen, McGregor, &

Ronksley-Pavia, 2018). Another study found that the sense of belonging experienced in a classroom can be independent of their sense of belonging in school. That is, a student can experience a strong sense of belonging in a classroom even when the same student does not feel strongly toward their school (Grodsky et al., 2021).

In this context, the measurement of a sense of belonging was geared toward students' sentiment toward school as a whole. The questions in the survey consist of 5 items on student perceptions of how they are treated (Table 2). These elements are perceived by academics as emotional engagement, which is strongly related to academic performance (Gibbs & Poskitt, 2010).

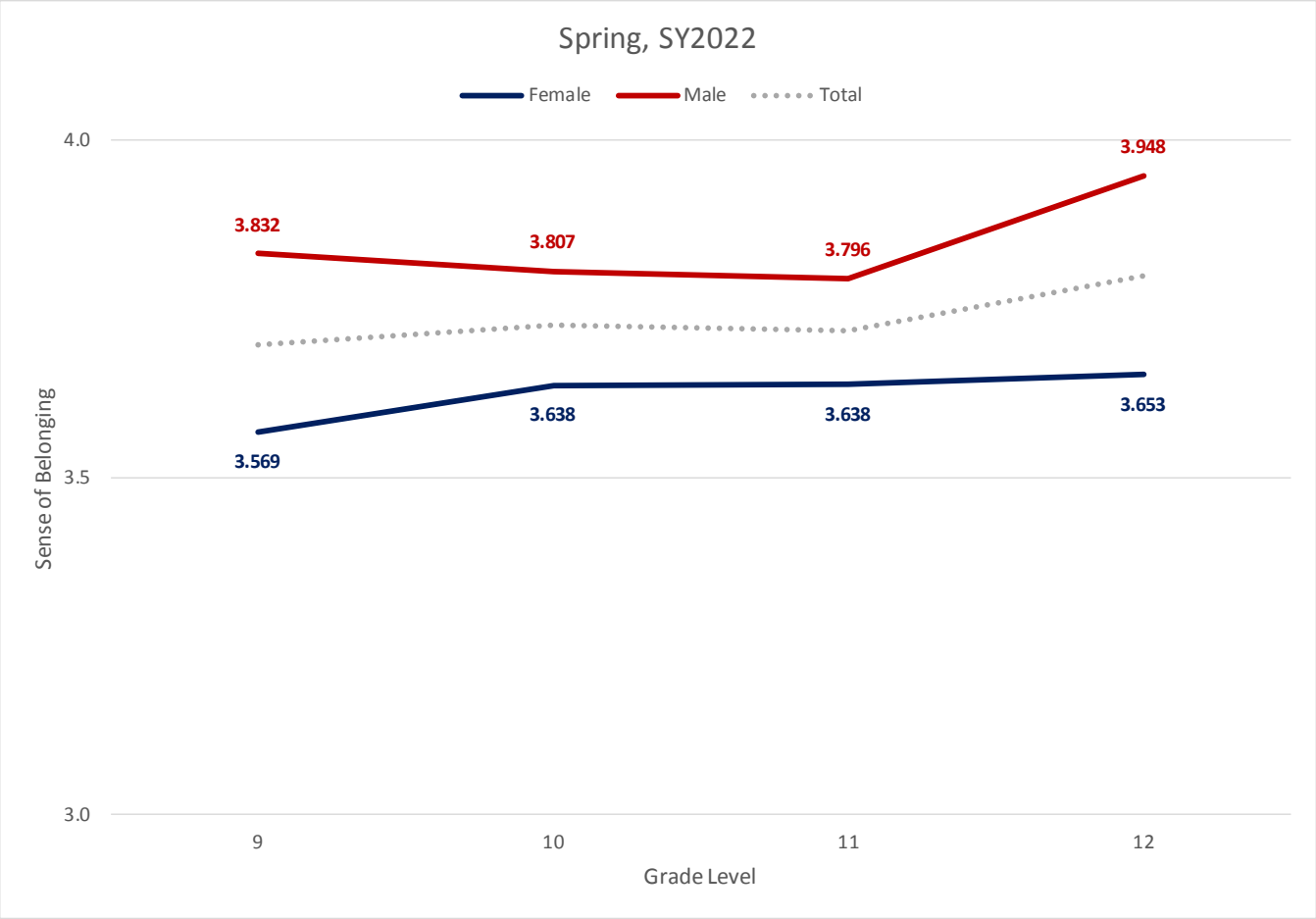
Table 2. Sense of Belonging Items in Student Survey on Supports and Environment

How well do people at your school understand you as a person?
How connected do you feel to the adults at your school?
How much respect do students in your school show you?
How much do you matter to others at this school?
Overall, how much do you feel like you belong at your school?

Similar to the teacher-student relationship measure, the findings from a sense of belonging included a significant gender gap, where male students had a stronger sense of belonging compared to female students (Figure 7). The additional notable findings include a lower sense of belonging among Black students compared to white students in 4th and 11th grades, multi-racial students in 4th and 7th grades, and English Language learner students in 3rd and 8th grades.

Despite the research findings that indicated a strong relationship to academic performance, the analysis did not find a significant relationship between a sense of belonging and assessment performance.

Figure 7. Sense of Belonging by Gender



Recommendations

School-Level Diagnostics

With district-wide trends identified, it would be helpful to further break down the assessment data by schools and classrooms as needed to develop instructional strategies for the upcoming school year. If there are significant variations among schools, it would be important to establish a collaborative learning space for staff members to exchange ideas and strategies.

There are a number of additional approaches to enhance diagnostics' value, including expanding data elements to consider the role of attendance, behavioral misconducts, or non-core subjects (e.g., arts, music, etc.).

Staff Development

A data-driven approach to instruction and data literacy requires a great deal of investment in staff development, a school climate and culture that supports the concept (Schildkamp, 2019), and the capacity to interpret the results in meaningful ways. Such professional development effort should be embedded in culturally responsive practices, implicit bias in teaching, the role of external factors like poverty, and other scientific discoveries that were known to impact instruction. As indicated in the report on the achievement gap, differentiated treatment and perception of students by their characteristics, whether race/ethnicity (Reardon & Galindo, 2009) or gender (Terrier, 2020), have significant effects on their academic performances.

Statement of Independence and Integrity

Chapin Hall adheres to the values of science, meeting the highest standards of ethics, integrity, rigor, and objectivity in its research, analyses, and reporting. Learn more about the principles that drive our work in our Statement of Independence.

Chapin Hall partners with policymakers, practitioners, and philanthropists at the forefront of research and policy development by applying a unique blend of scientific research, real-world experience, and policy expertise to construct actionable information, practical tools, and, ultimately, positive change for children and families.

Established in 1985, Chapin Hall's areas of research include child welfare systems, community capacity to support children and families, and youth homelessness. For more information about Chapin Hall, visit www.chapinhall.org.

Suggested Citation

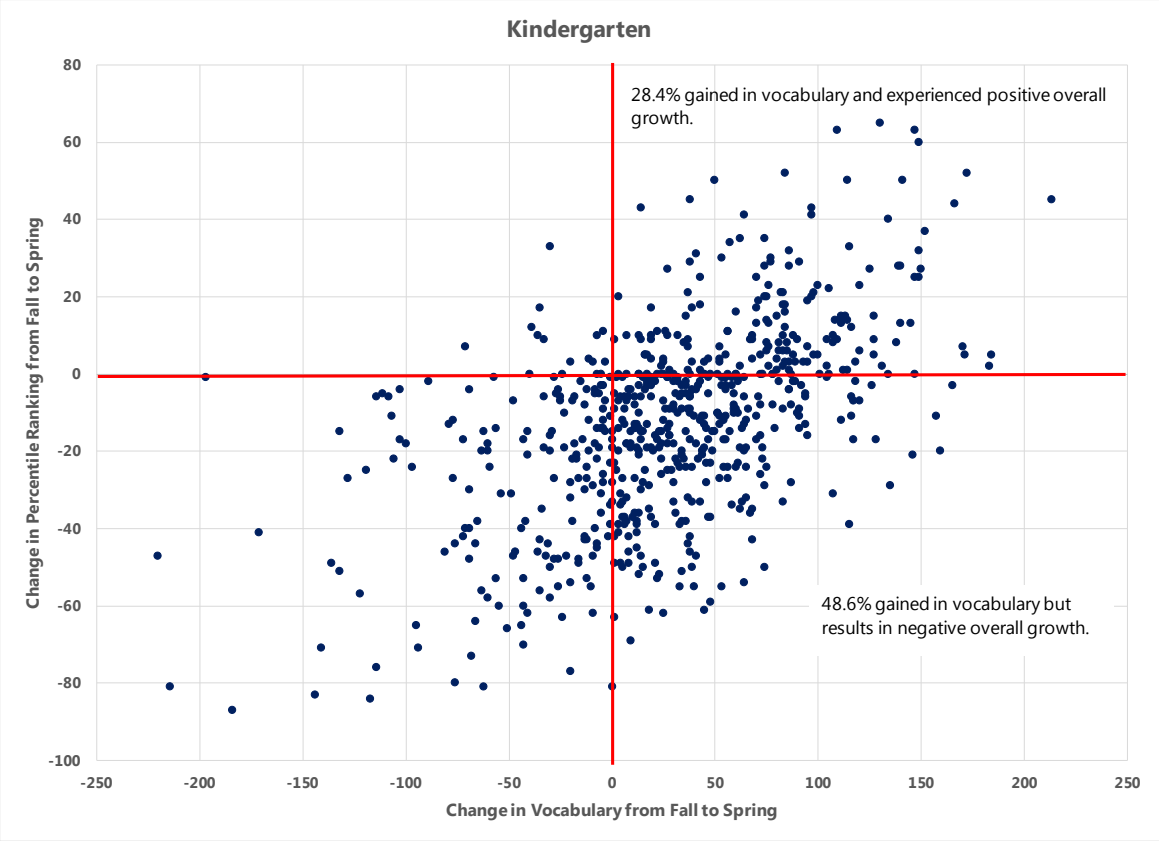
Kim, K. (2022). *Achievement Gaps in St. Charles Community Unit School District 303*. Chicago, IL: Chapin Hall at the University of Chicago.

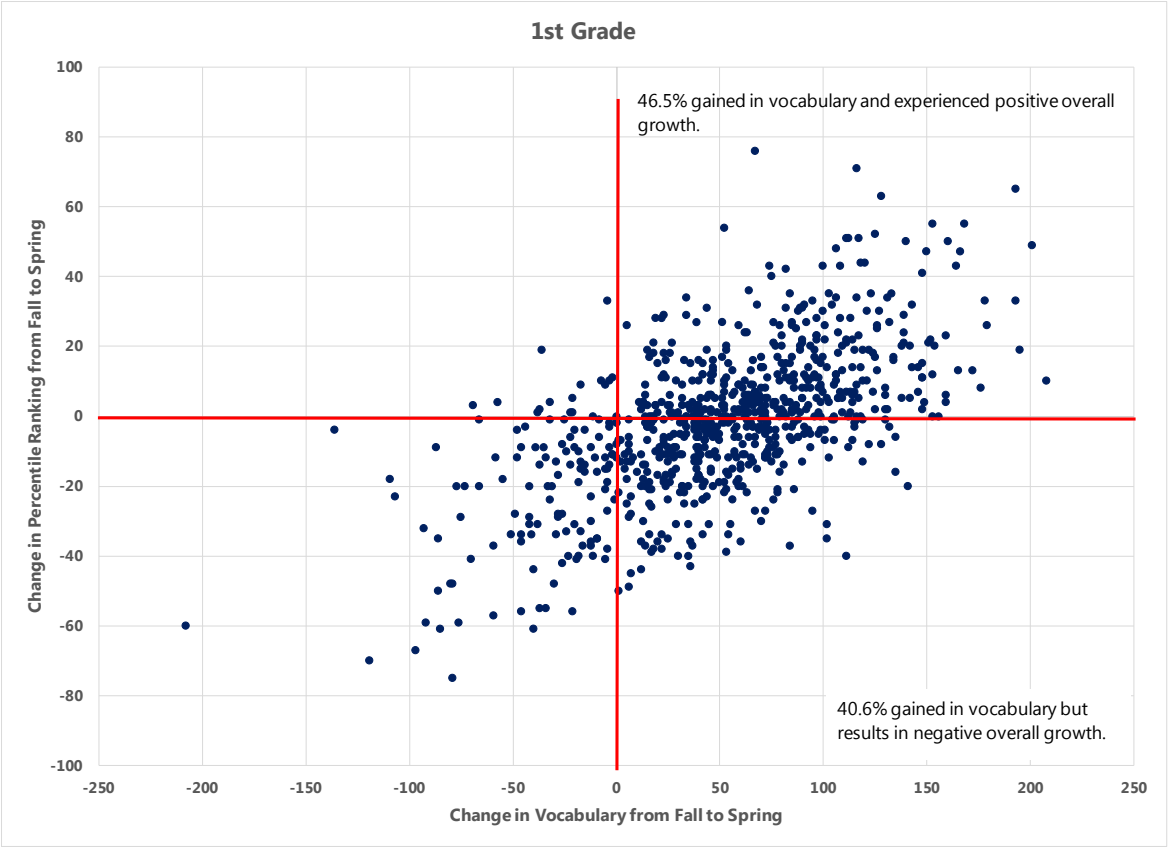
Correspondence

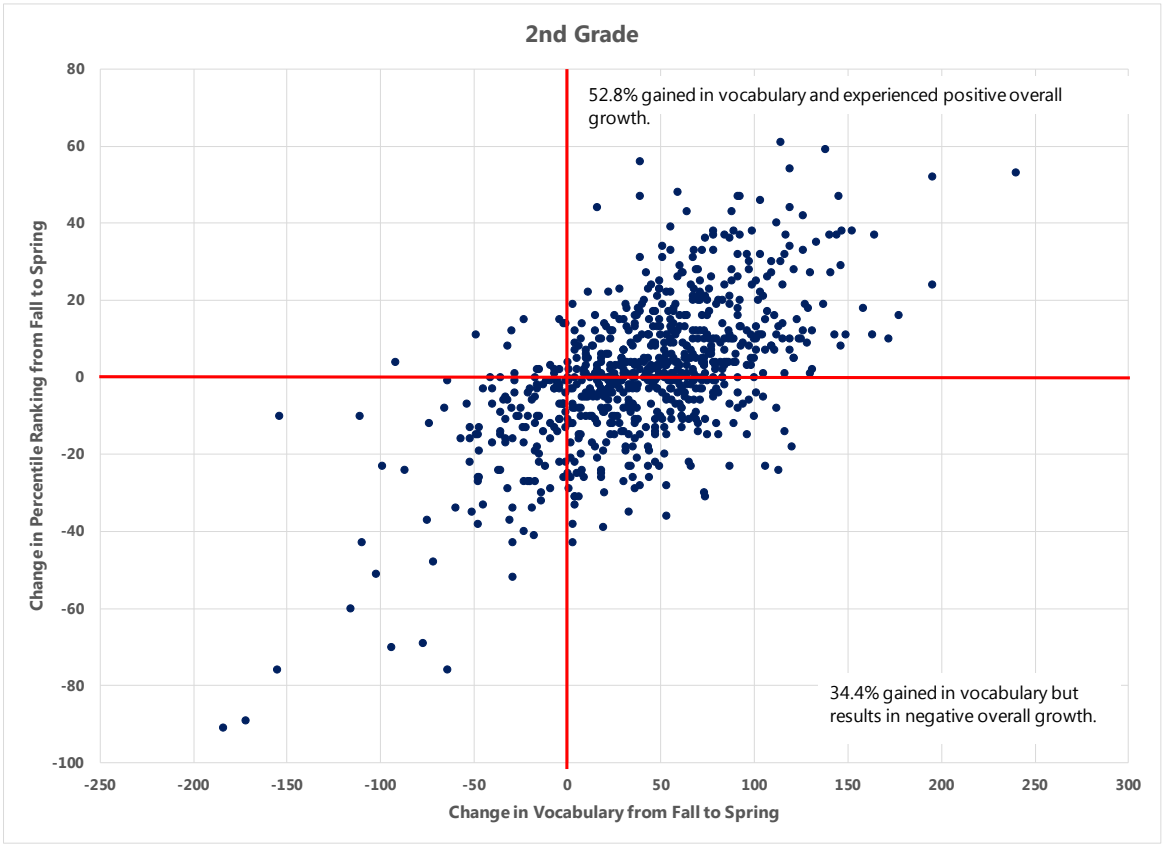
Kiljoong Kim, Senior Policy Analyst, Chapin Hall at the University of Chicago
kkim@chapinhall.org; 773-256-5129

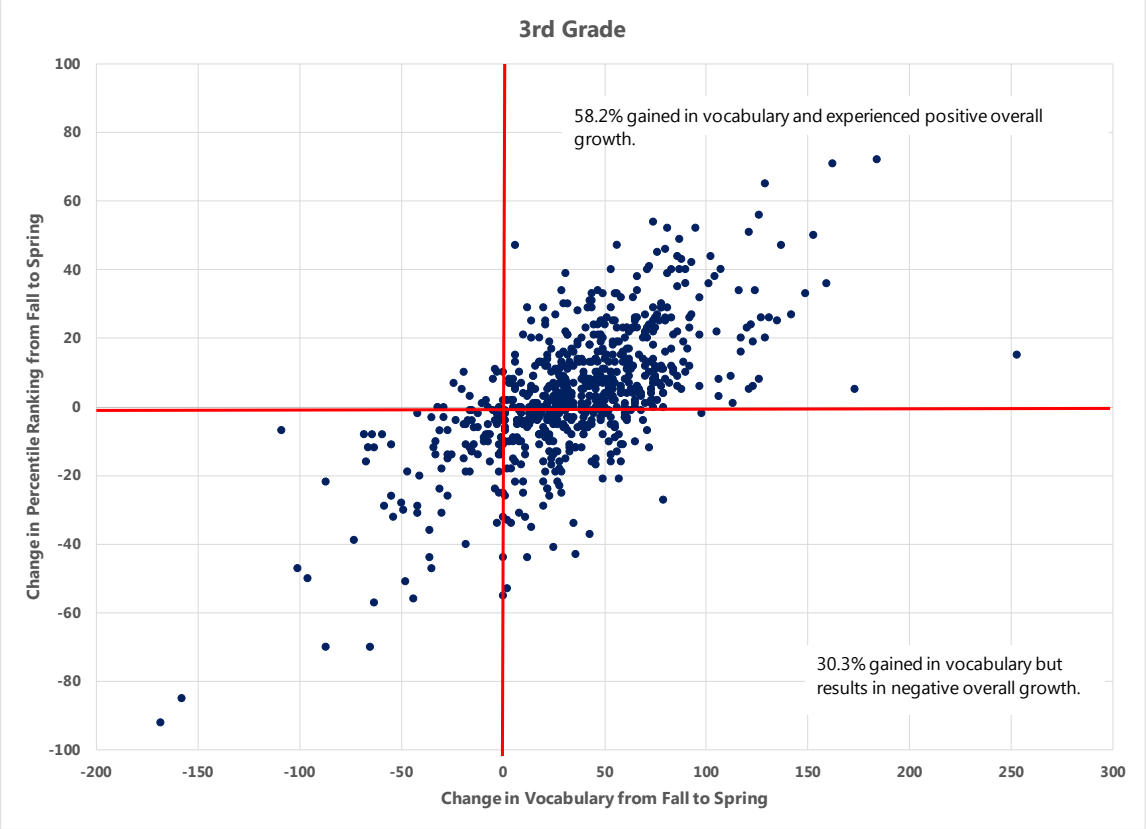
Appendices

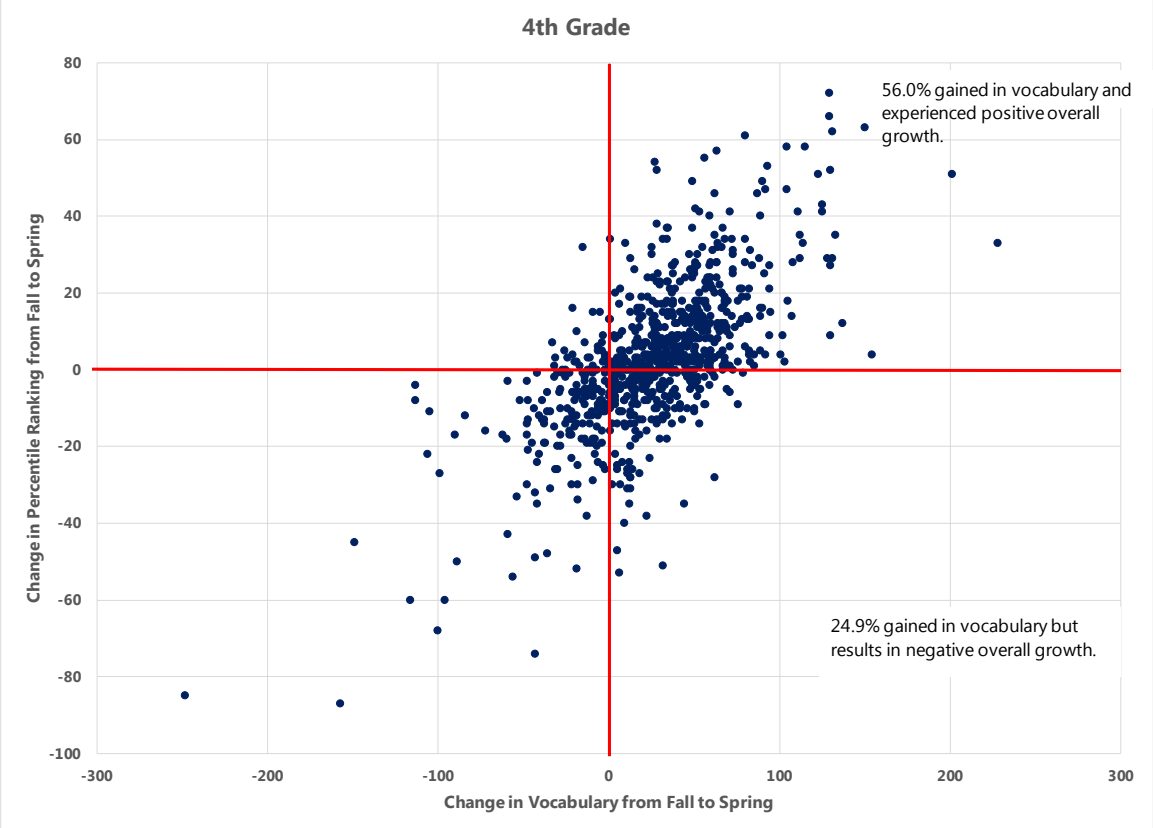
Appendix A. Relationship between Change in Vocabulary and Change in Percentile Ranking in Reading

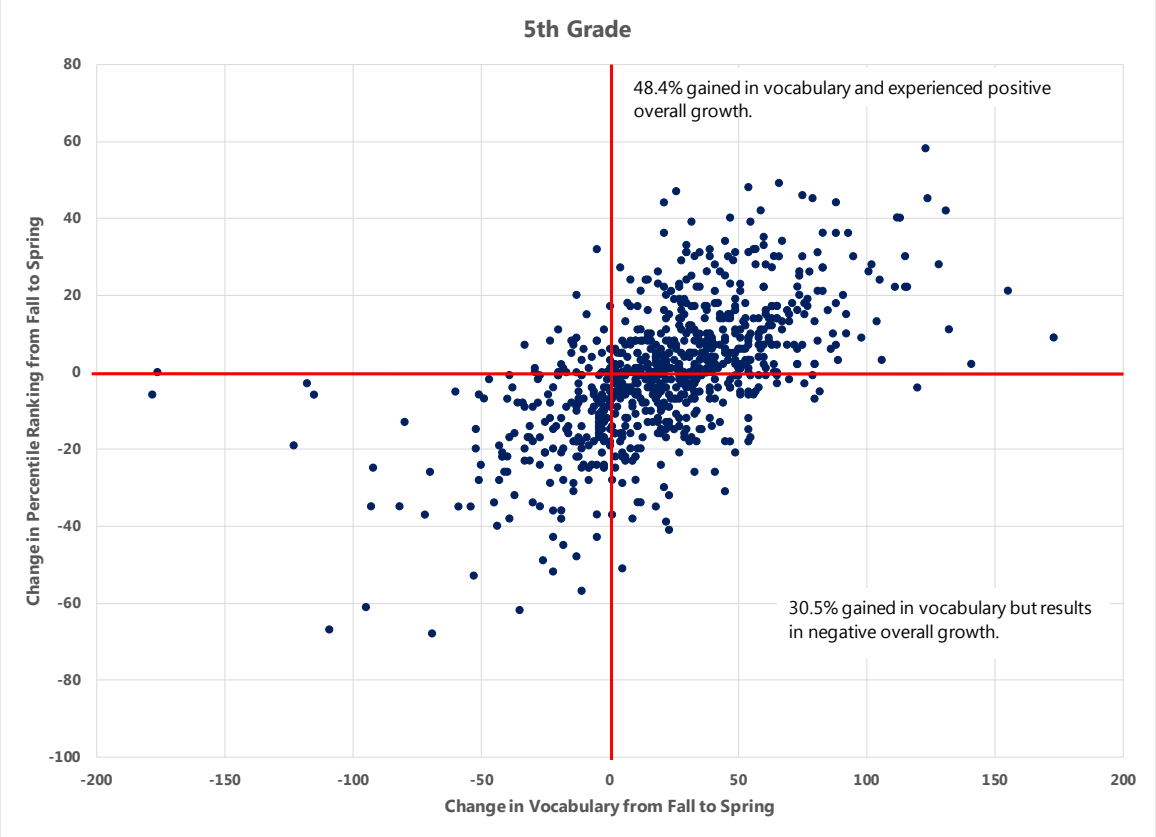


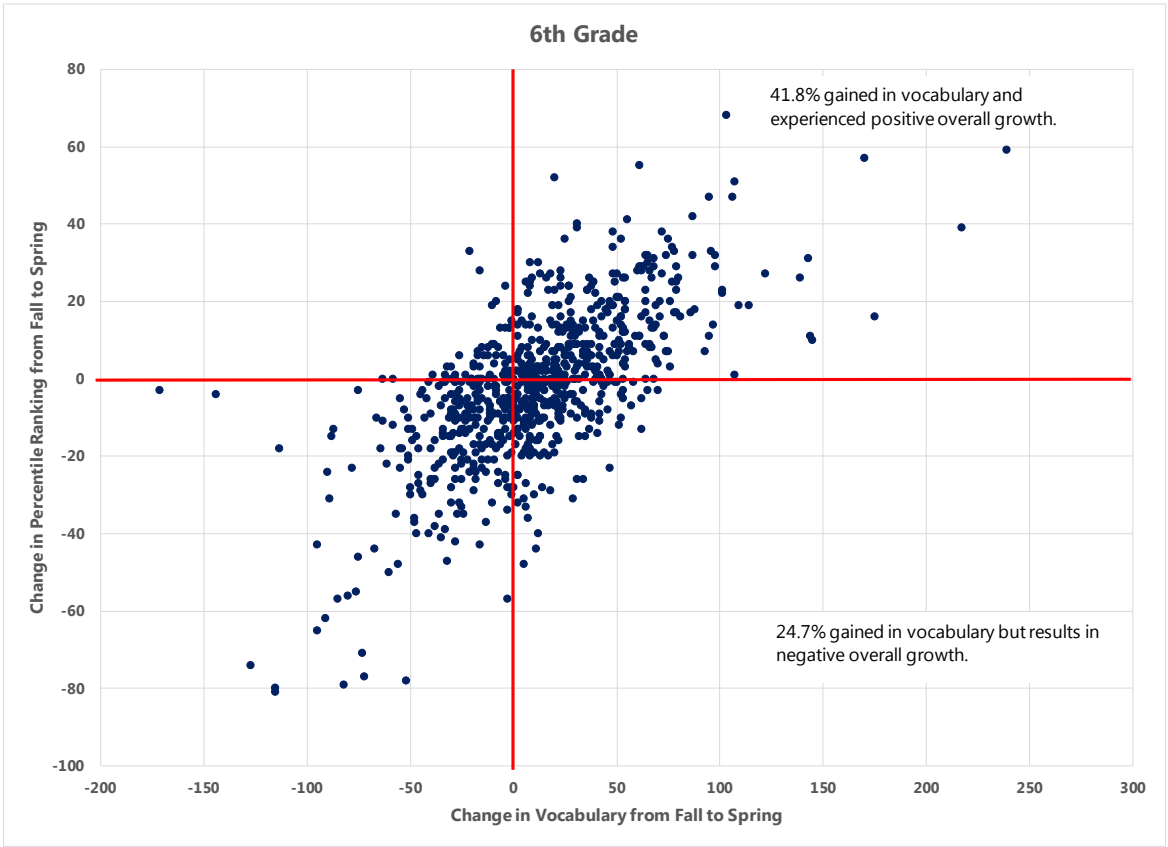

1st Grade
46.5% gained in vocabulary and experienced positive overall growth.
40.6% gained in vocabulary but results in negative overall growth.
Change in Percentile Ranking from Fall to Spring
Change in Vocabulary from Fall to Spring
100
80
60
40
20
0
-20
-40
-60
-80
-100
-250
-200
-150
-100
-50
0
50
100
150
200
250

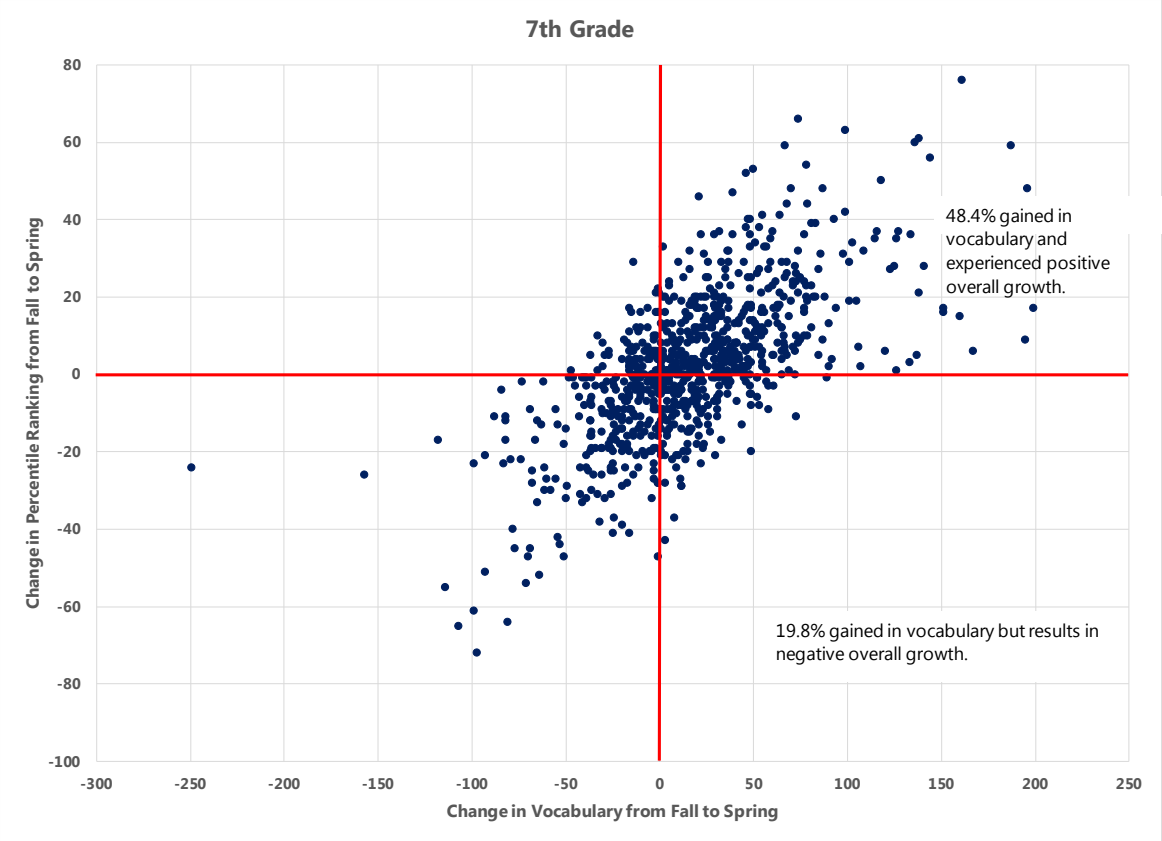

2nd Grade
52.8% gained in vocabulary and experienced positive overall growth.
34.4% gained in vocabulary but results in negative overall growth.
Change in Percentile Ranking from Fall to Spring
Change in Vocabulary from Fall to Spring
80
60
40
20
0
-20
-40
-60
-80
-100
-250
-200
-150
-100
-50
0
50
100
150
200
250
300


3rd Grade
58.2% gained in vocabulary and experienced positive overall growth.
30.3% gained in vocabulary but results in negative overall growth.
Change in Percentile Ranking from Fall to Spring
Change in Vocabulary from Fall to Spring
100
80
60
40
20
0
-20
-40
-60
-80
-100
-200
-150
-100
-50
0
50
100
150
200
250
300


4th Grade
56.0% gained in vocabulary and experienced positive overall growth.
24.9% gained in vocabulary but results in negative overall growth.
Change in Percentile Ranking from Fall to Spring
Change in Vocabulary from Fall to Spring
80
60
40
20
0
-20
-40
-60
-80
-100
-300
-200
-100
0
100
200
300

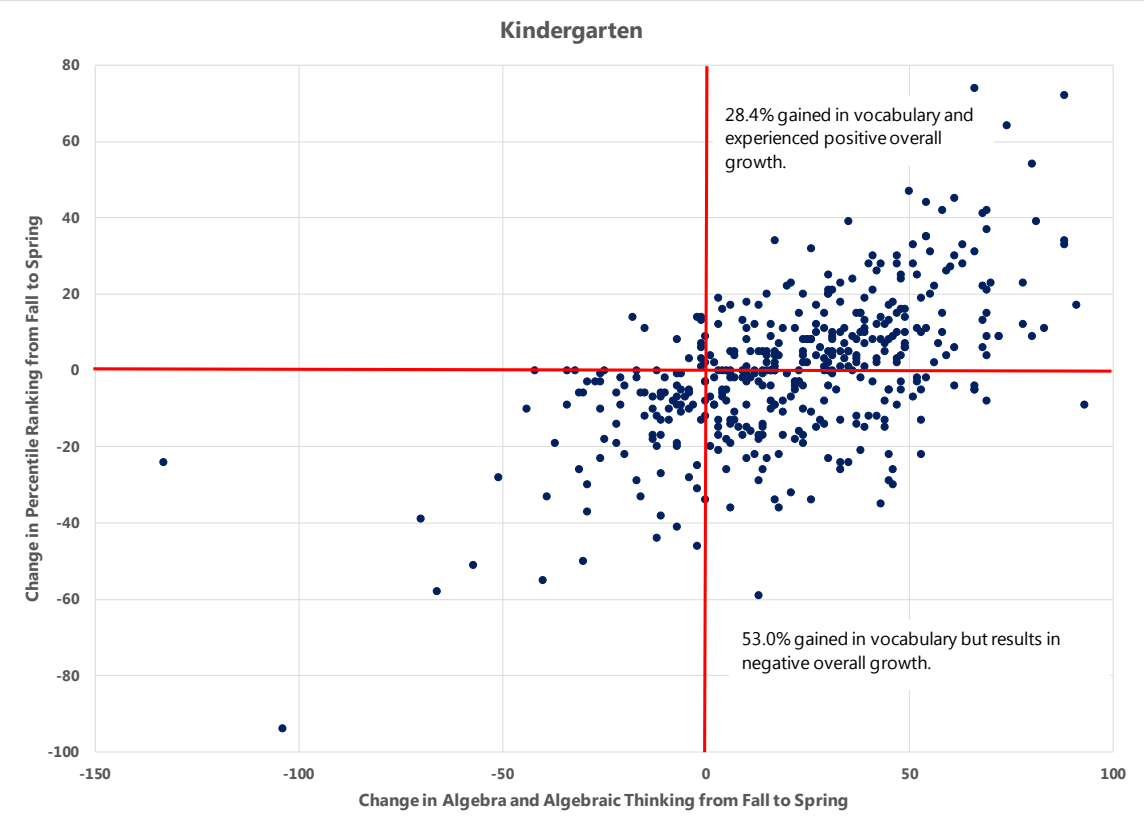

5th Grade
48.4% gained in vocabulary and experienced positive overall growth.
30.5% gained in vocabulary but results in negative overall growth.
Change in Percentile Ranking from Fall to Spring
Change in Vocabulary from Fall to Spring
80
60
40
20
0
-20
-40
-60
-80
-100
-200
-150
-100
-50
0
50
100
150
200

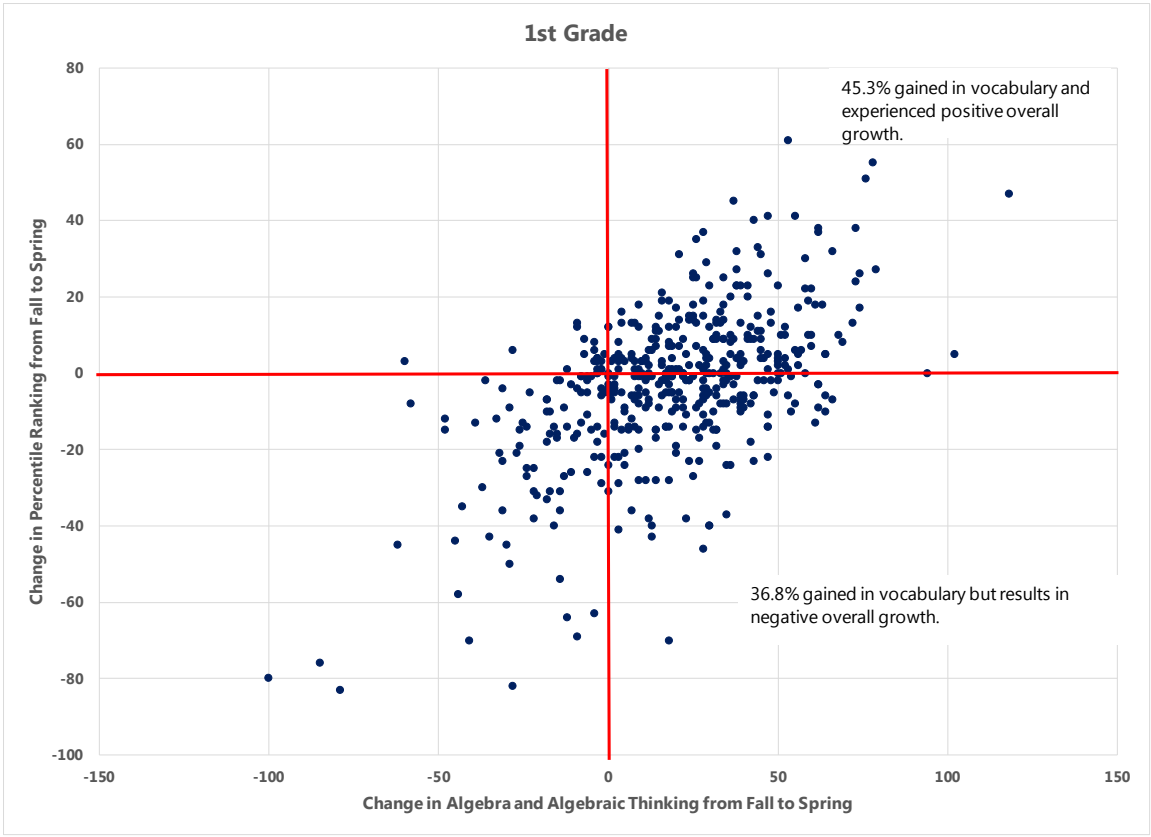

6th Grade
41.8% gained in vocabulary and experienced positive overall growth.
24.7% gained in vocabulary but results in negative overall growth.
Change in Percentile Ranking from Fall to Spring
Change in Vocabulary from Fall to Spring
80
60
40
20
0
-20
-40
-60
-80
-100
-200
-150
-100
-50
0
50
100
150
200
250
300

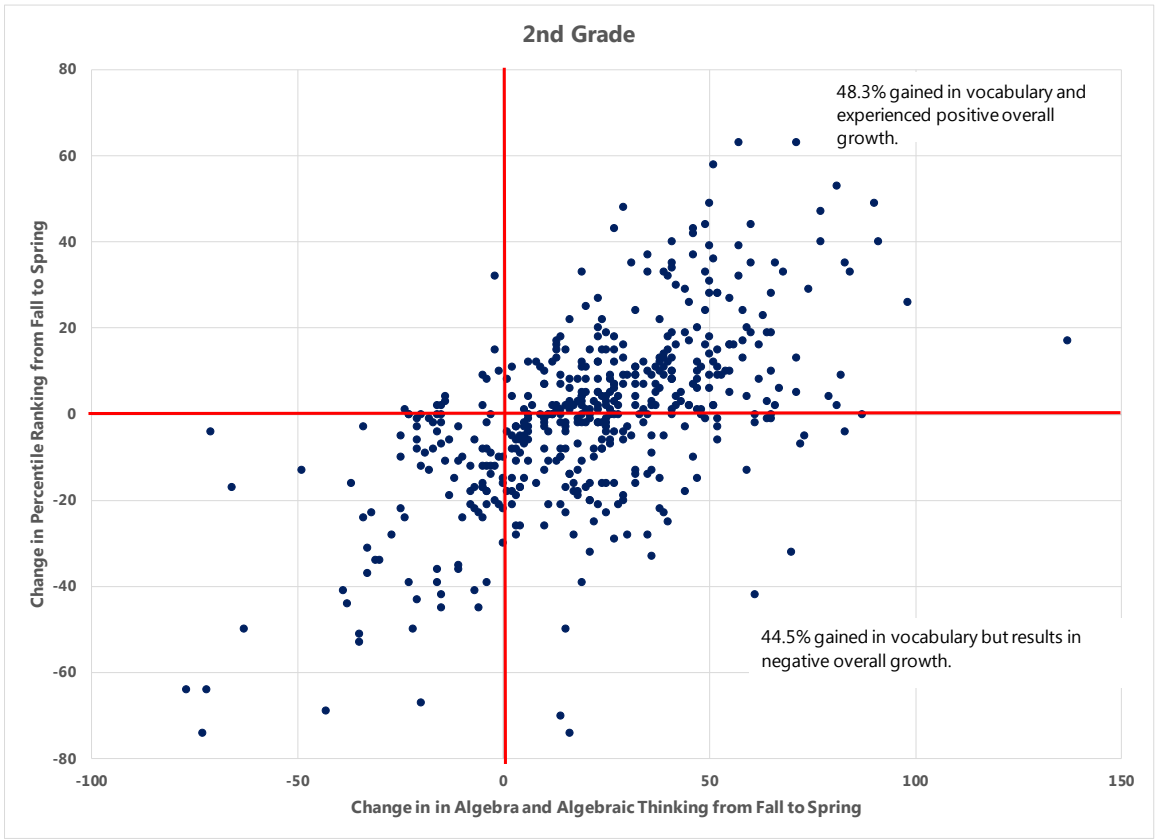

7th Grade
Change in Percentile Ranking from Fall to Spring
Change in Vocabulary from Fall to Spring
48.4% gained in vocabulary and experienced positive overall growth.
19.8% gained in vocabulary but results in negative overall growth.

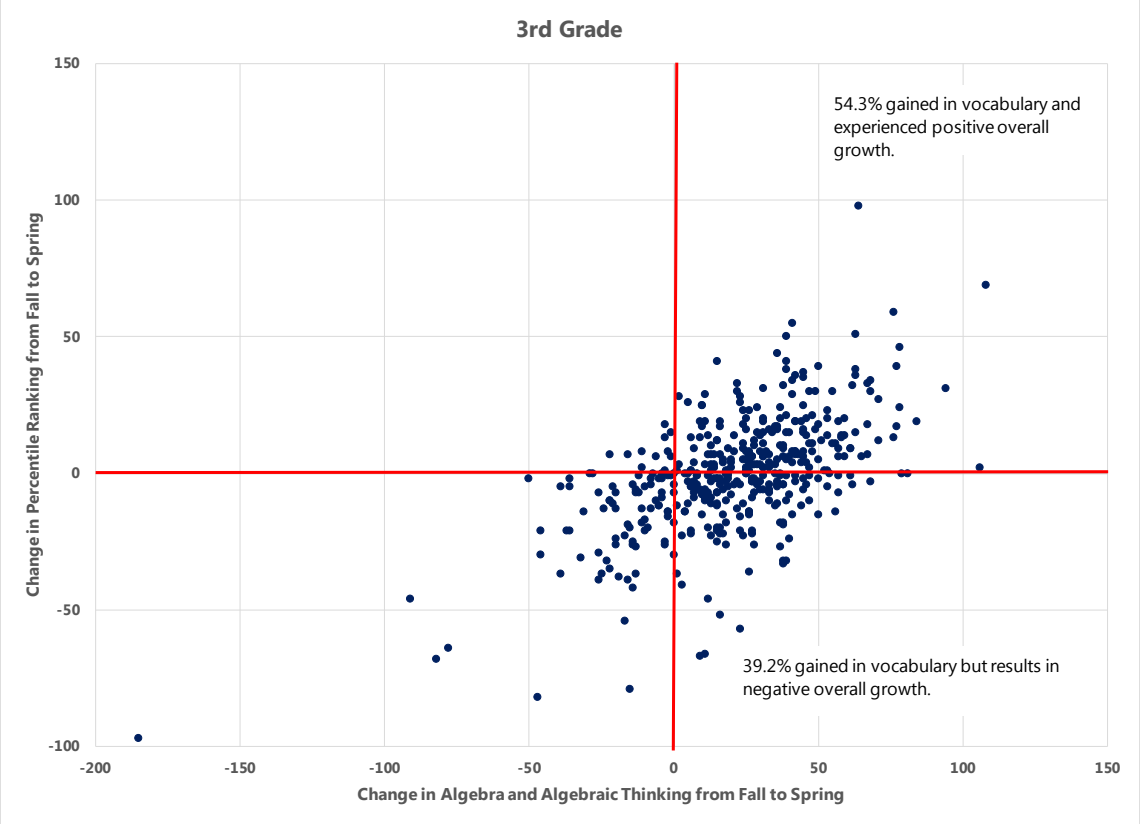
8th Grade
Change in Percentile Ranking from Fall to Spring
Change in Vocabulary from Fall to Spring
46.5% gained in vocabulary and experienced positive overall growth.
20.0% gained in vocabulary but results in negative overall growth.

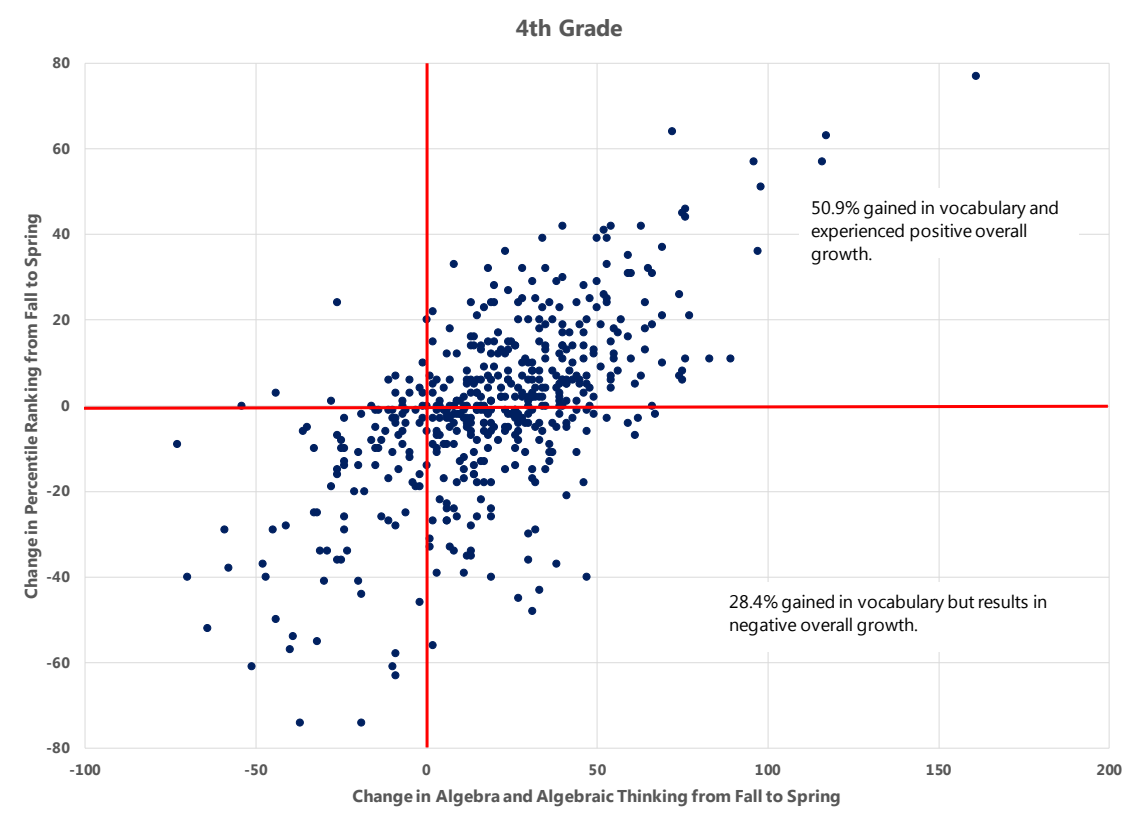
Appendix B. Relationship between Change in Vocabulary and Change in Percentile Ranking in Mathematics



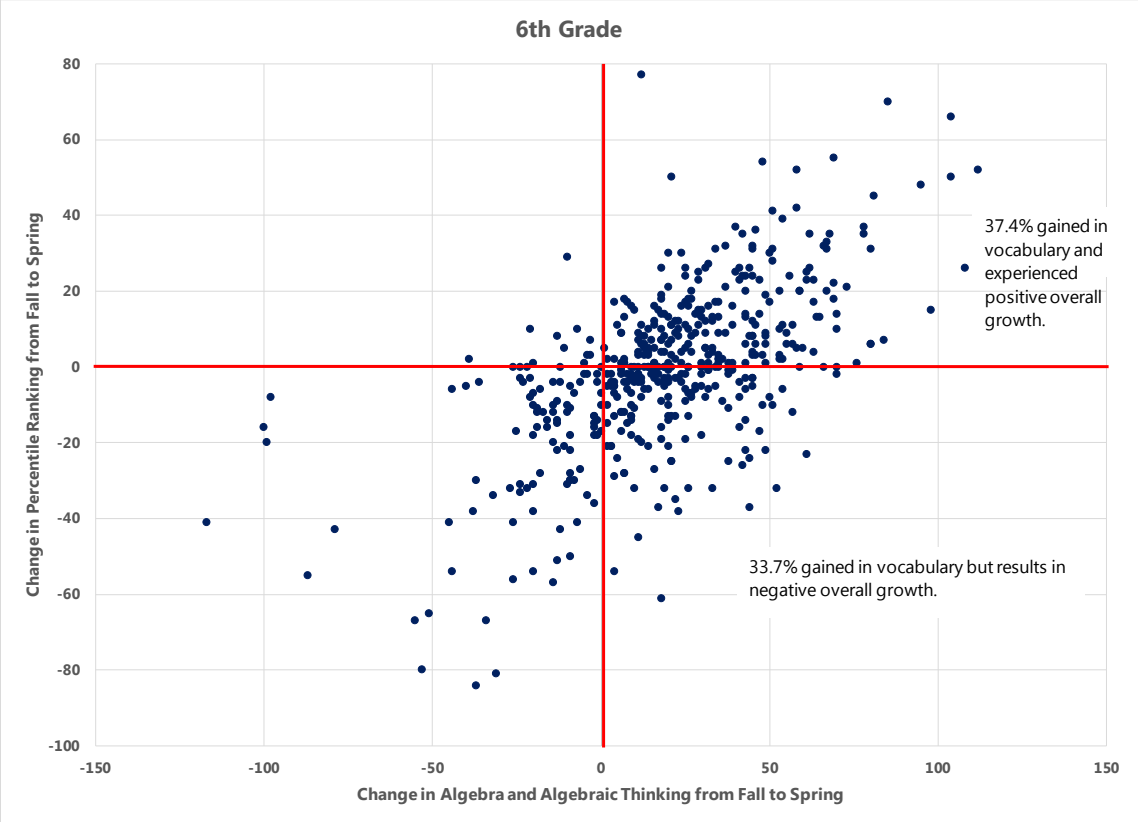

1st Grade
45.3% gained in vocabulary and experienced positive overall growth.
36.8% gained in vocabulary but results in negative overall growth.
Change in Percentile Ranking from Fall to Spring
Change in Algebra and Algebraic Thinking from Fall to Spring
80
60
40
20
0
-20
-40
-60
-80
-100
-150
-100
-50
0
50
100
150

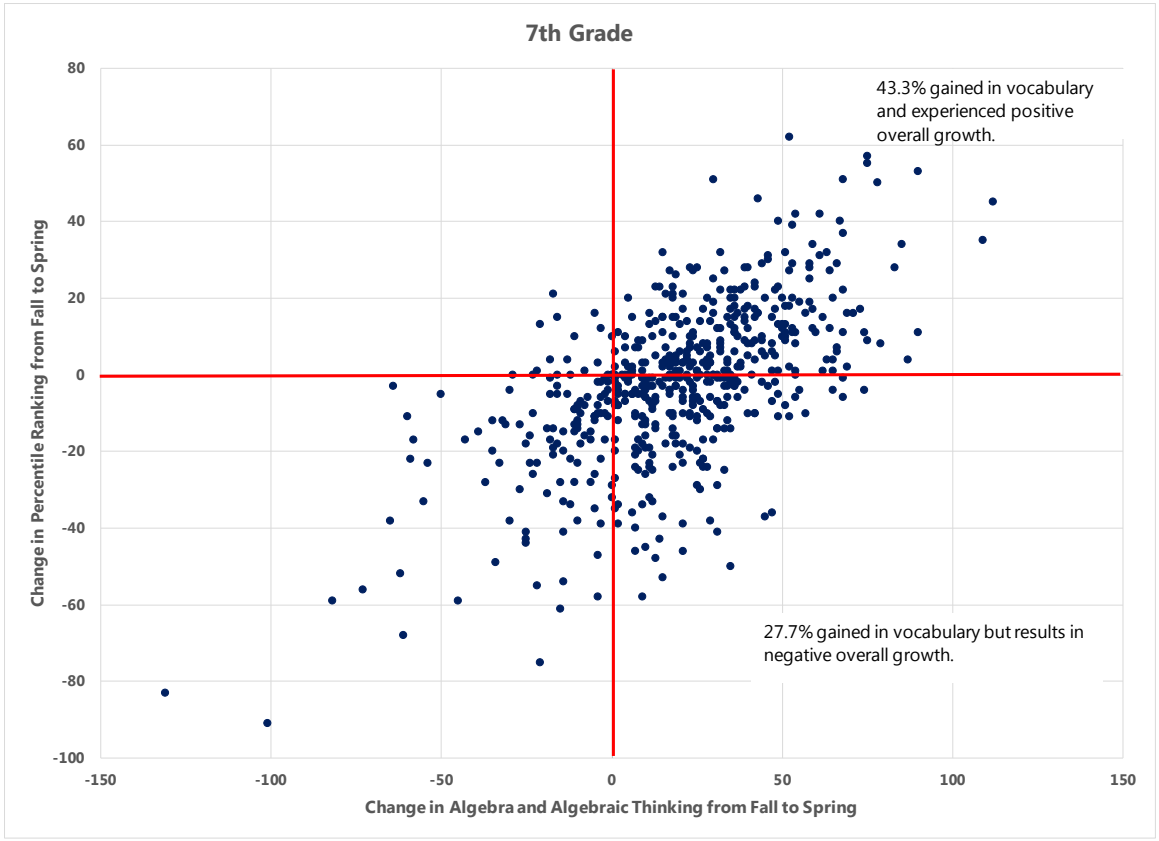

2nd Grade
48.3% gained in vocabulary and experienced positive overall growth.
44.5% gained in vocabulary but results in negative overall growth.
Change in Percentile Ranking from Fall to Spring
Change in in Algebra and Algebraic Thinking from Fall to Spring
80
60
40
20
0
-20
-40
-60
-80
-100
-50
0
50
100
150

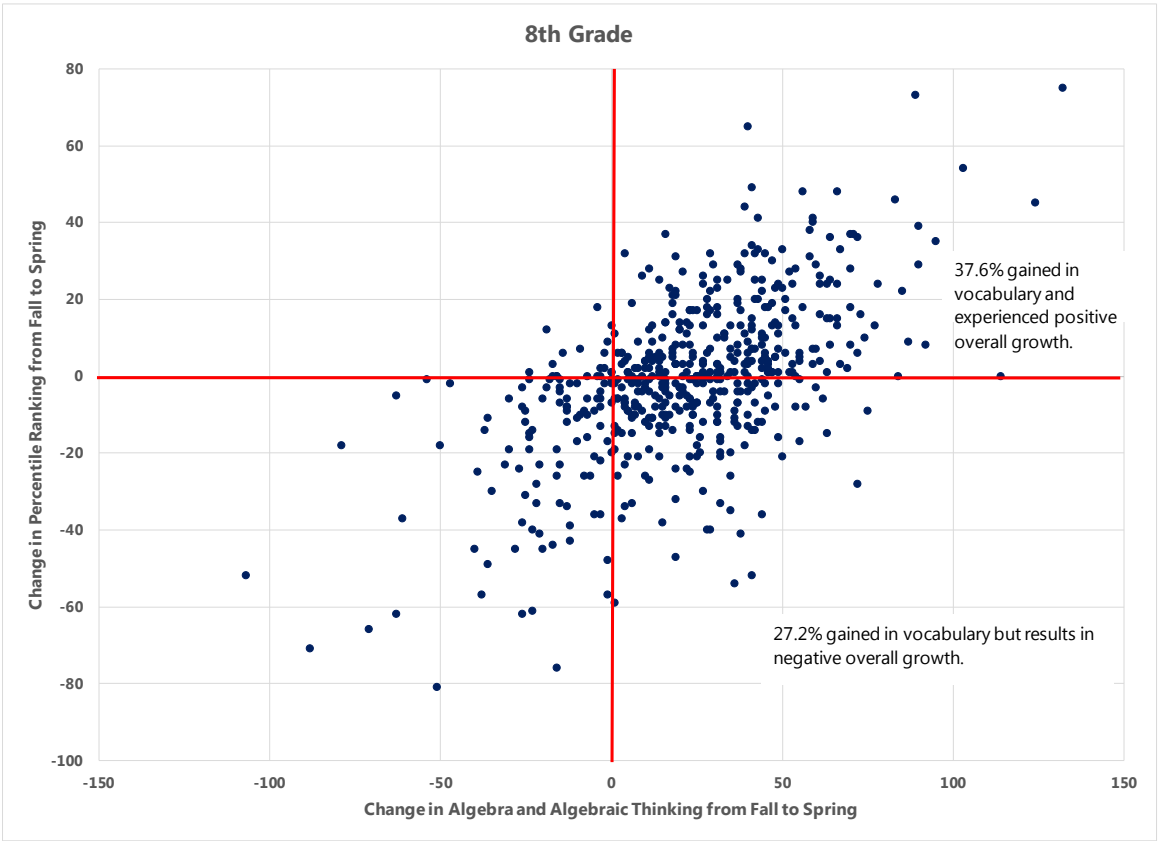

3rd Grade
54.3% gained in vocabulary and experienced positive overall growth.
39.2% gained in vocabulary but results in negative overall growth.
Change in Percentile Ranking from Fall to Spring
Change in Algebra and Algebraic Thinking from Fall to Spring
150
100
50
0
-50
-100
-200
-150
-100
-50
0
50
100
150


4th Grade
50.9% gained in vocabulary and experienced positive overall growth.
28.4% gained in vocabulary but results in negative overall growth.
Change in Percentile Ranking from Fall to Spring
Change in Algebra and Algebraic Thinking from Fall to Spring
80
60
40
20
0
-20
-40
-60
-80
-100
-50
0
50
100
150
200

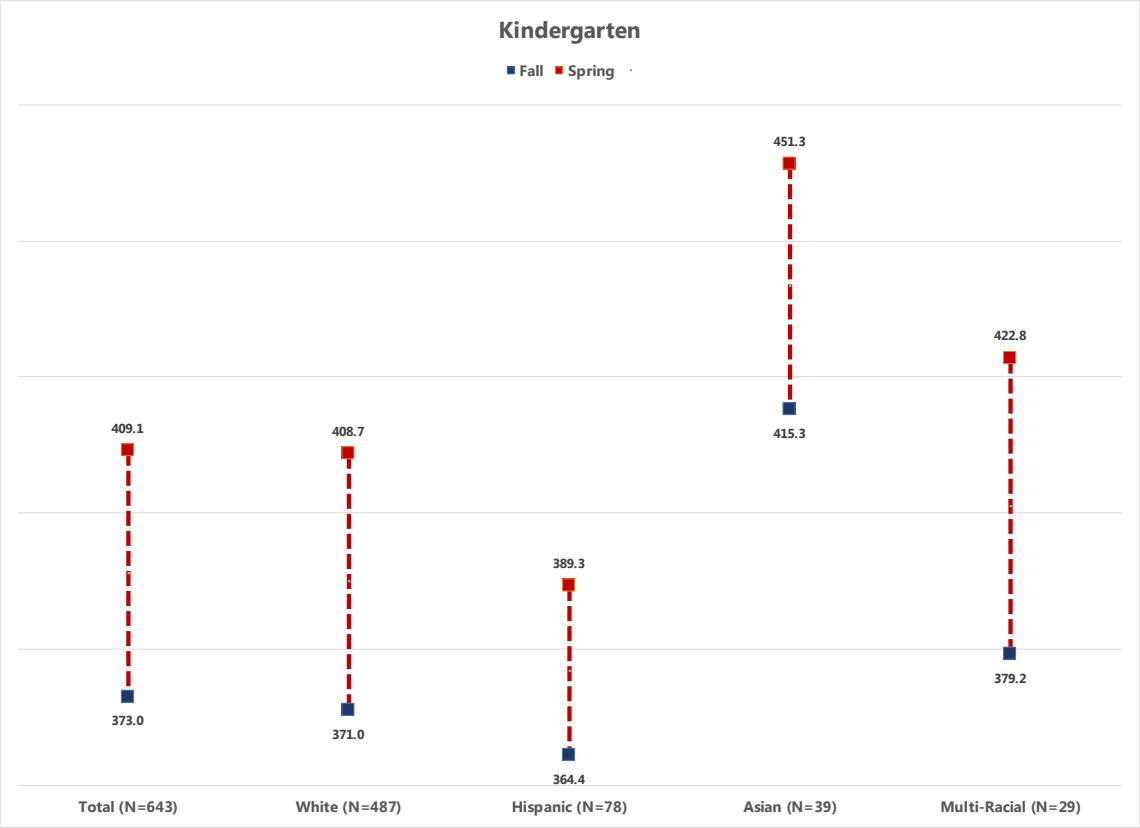
5th Grade
Change in Percentile Ranking from Fall to Spring
Change in Algebra and Algebraic Thinking from Fall to Spring
43.1% gained in vocabulary and experienced positive overall growth.
22.1% gained in vocabulary but results in negative overall growth.

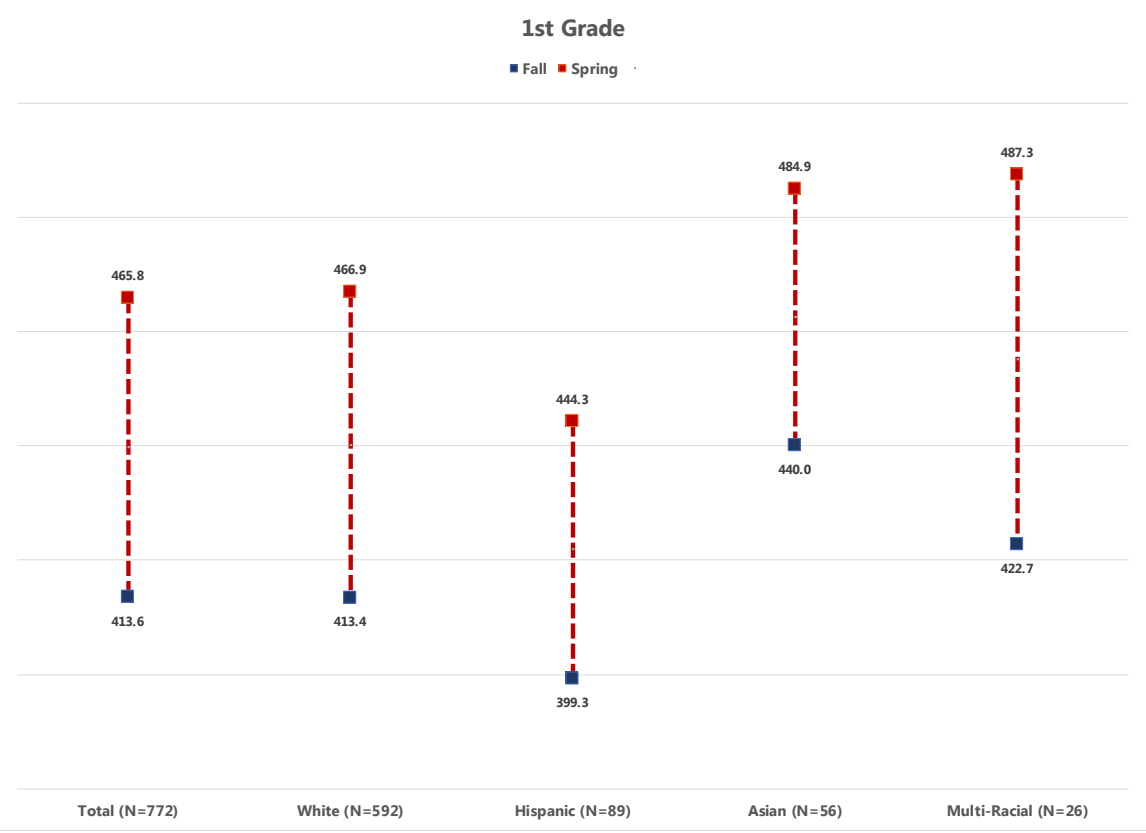

6th Grade
Change in Percentile Ranking from Fall to Spring
Change in Algebra and Algebraic Thinking from Fall to Spring
37.4% gained in vocabulary and experienced positive overall growth.
33.7% gained in vocabulary but results in negative overall growth.


7th Grade
43.3% gained in vocabulary and experienced positive overall growth.
27.7% gained in vocabulary but results in negative overall growth.
Change in Percentile Ranking from Fall to Spring
Change in Algebra and Algebraic Thinking from Fall to Spring
80
60
40
20
0
-20
-40
-60
-80
-100
-150
-100
-50
0
50
100
150

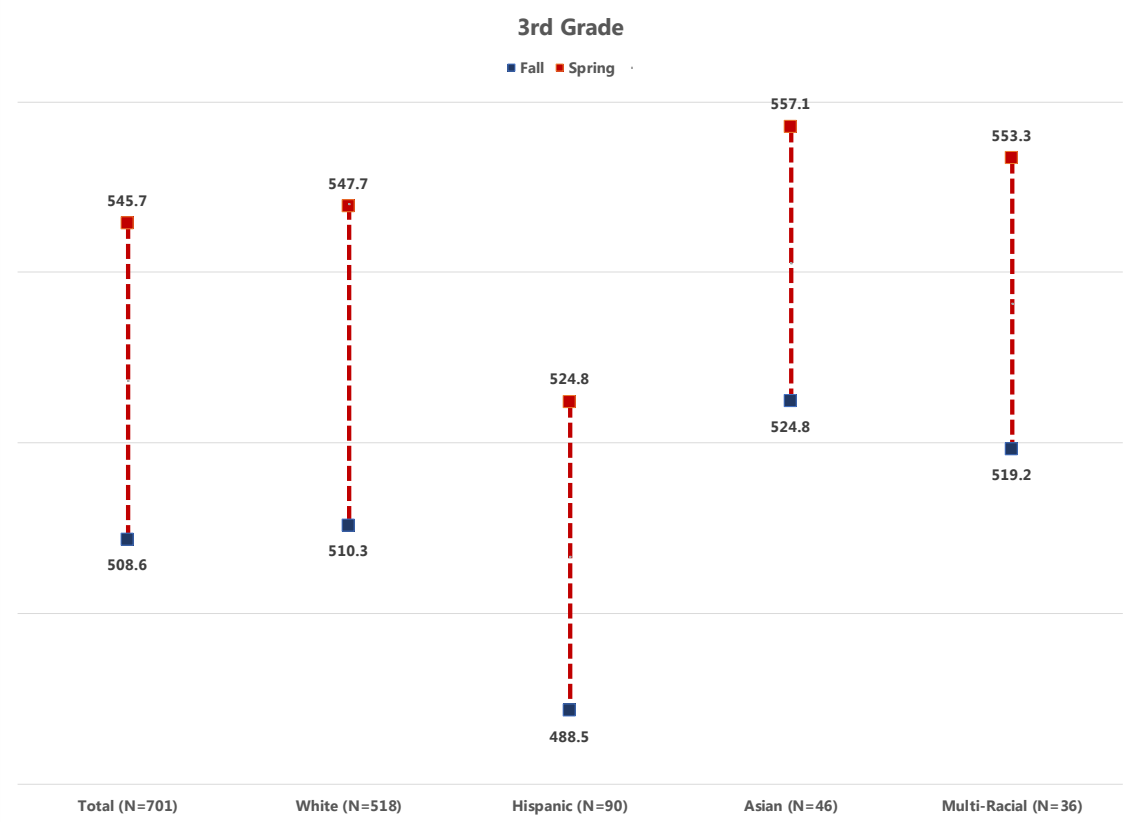

8th Grade
37.6% gained in vocabulary and experienced positive overall growth.
27.2% gained in vocabulary but results in negative overall growth.
Change in Percentile Ranking from Fall to Spring
Change in Algebra and Algebraic Thinking from Fall to Spring
80
60
40
20
0
-20
-40
-60
-80
-100
-150
-100
-50
0
50
100
150

Appendix C. Fall to Spring Growth in Reading during SY2021

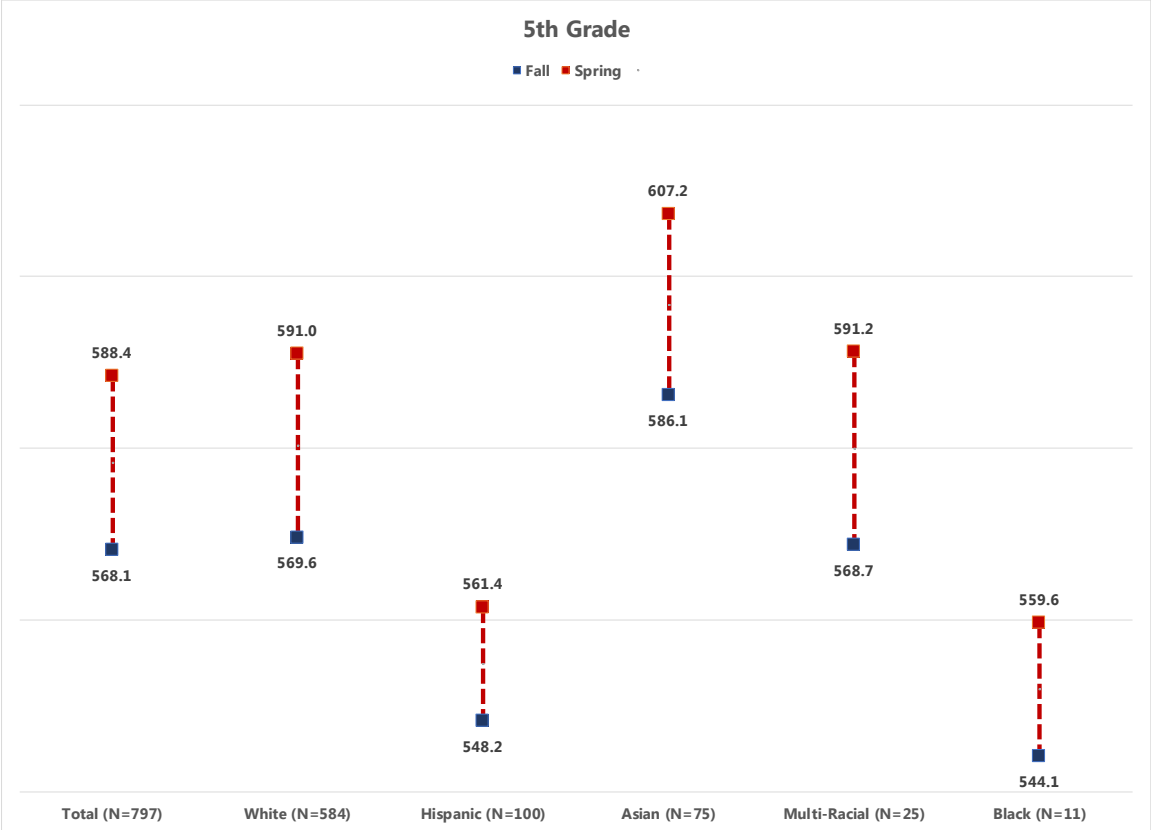


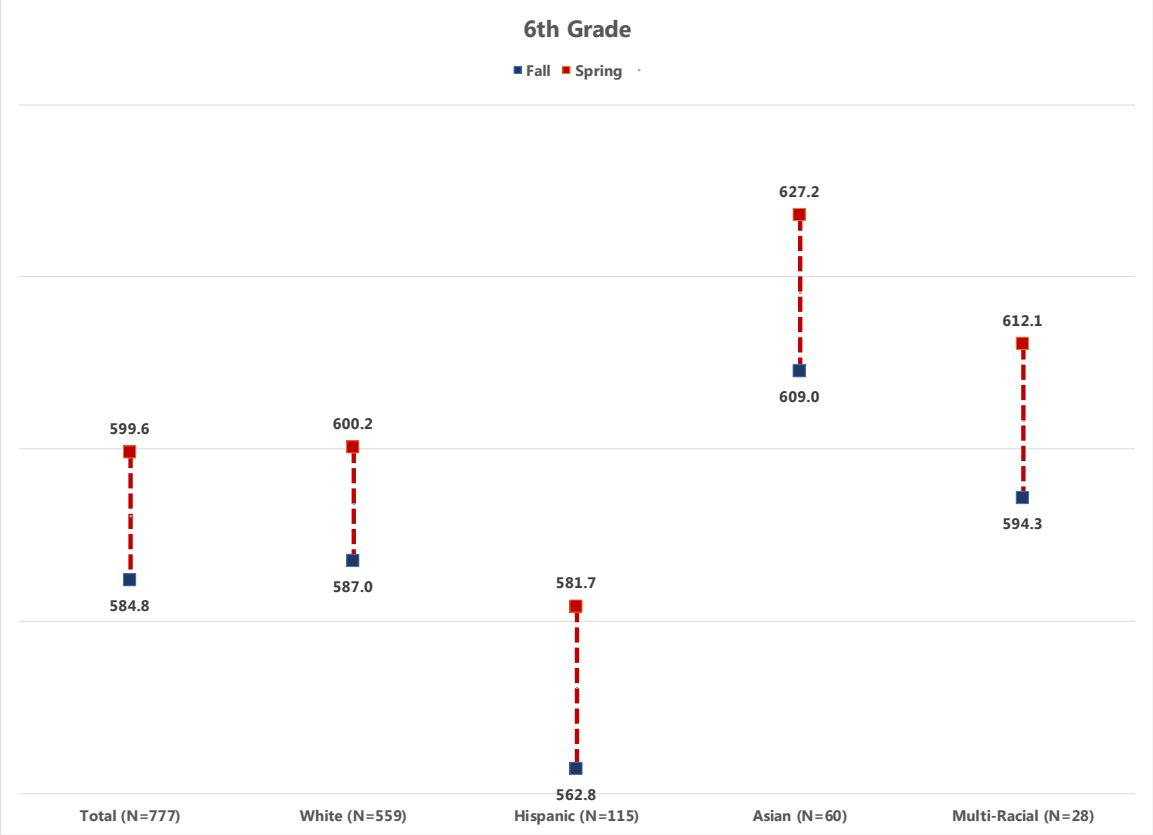


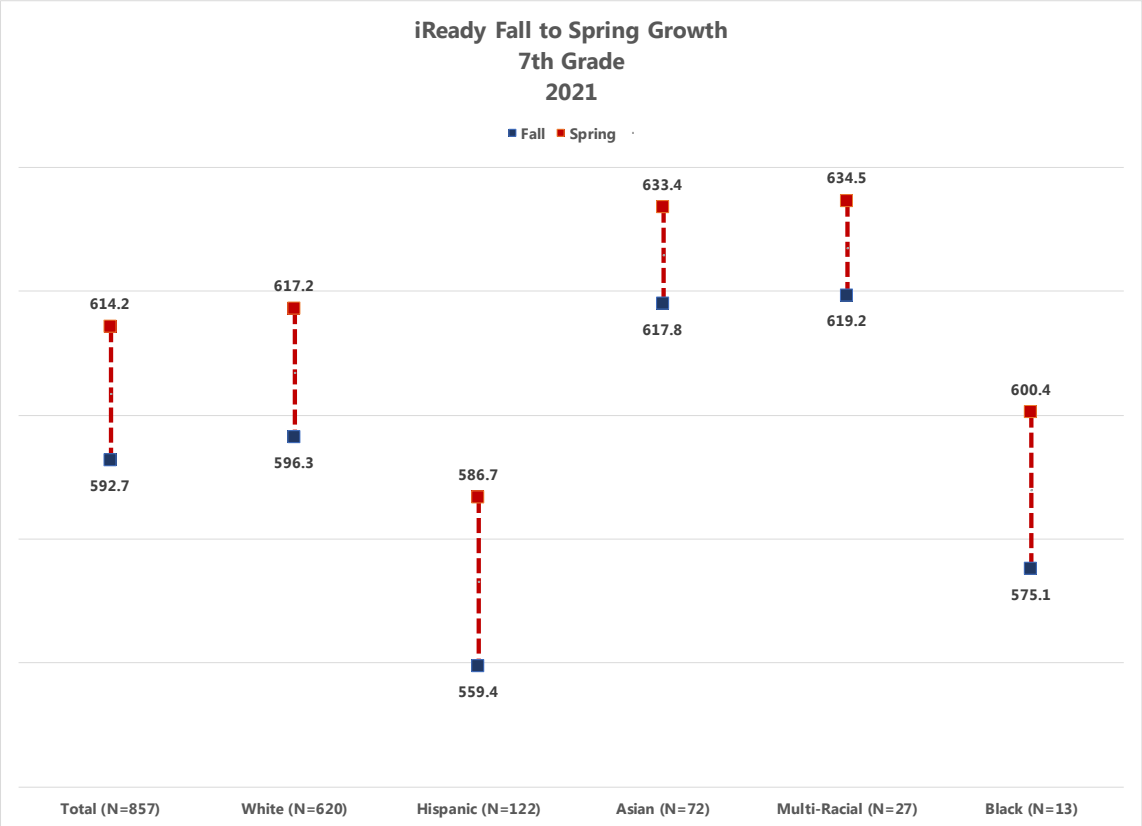
2nd Grade
Fall
Spring
508.2
466.3
508.4
465.2
492.1
458.4
540.3
496.5
516.0
469.0
Total (N=768)
White (N=567)
Hispanic (N=104)
Asian (N=59)
Multi-Racial (N=22)

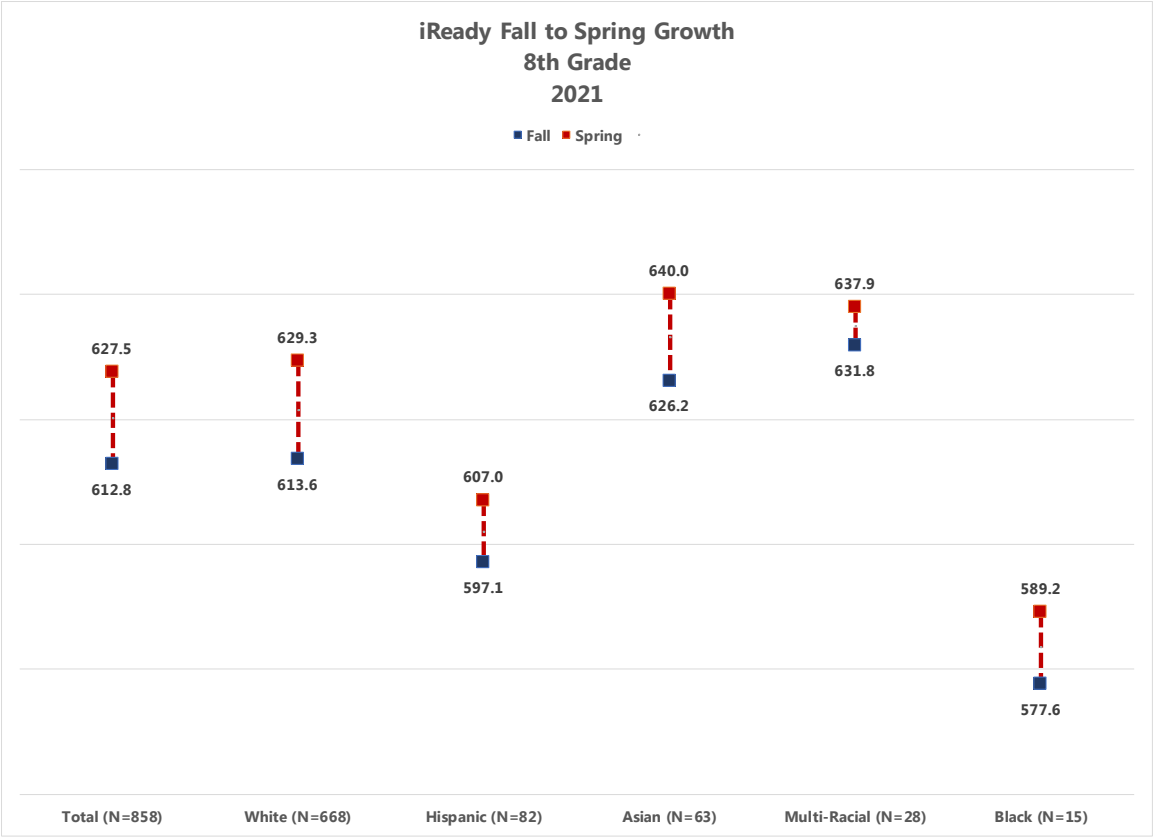

3rd Grade
Fall
Spring
545.7
508.6
547.7
510.3
524.8
488.5
557.1
524.8
553.3
519.2
Total (N=701)
White (N=518)
Hispanic (N=90)
Asian (N=46)
Multi-Racial (N=36)

4th Grade
Fall
Spring
570.2
540.4
574.6
543.3
539.4
513.7
586.8
563.4
576.4
546.3
532.4
511.7
Total (N=803)
White (N=586)
Hispanic (N=97)
Asian (N=65)
Multi-Racial (N=34)
Black (N=16)

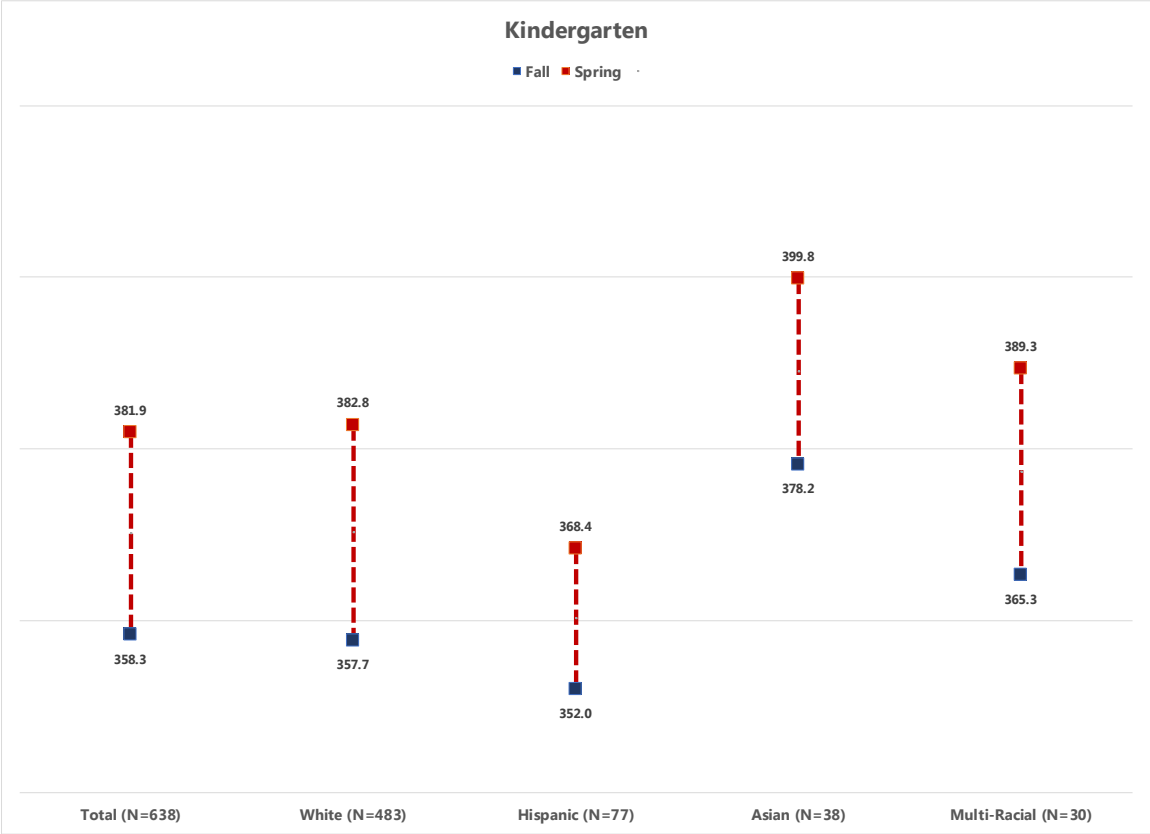

5th Grade
Fall
Spring
588.4
568.1
591.0
569.6
561.4
548.2
607.2
586.1
591.2
568.7
559.6
544.1
Total (N=797)
White (N=584)
Hispanic (N=100)
Asian (N=75)
Multi-Racial (N=25)
Black (N=11)

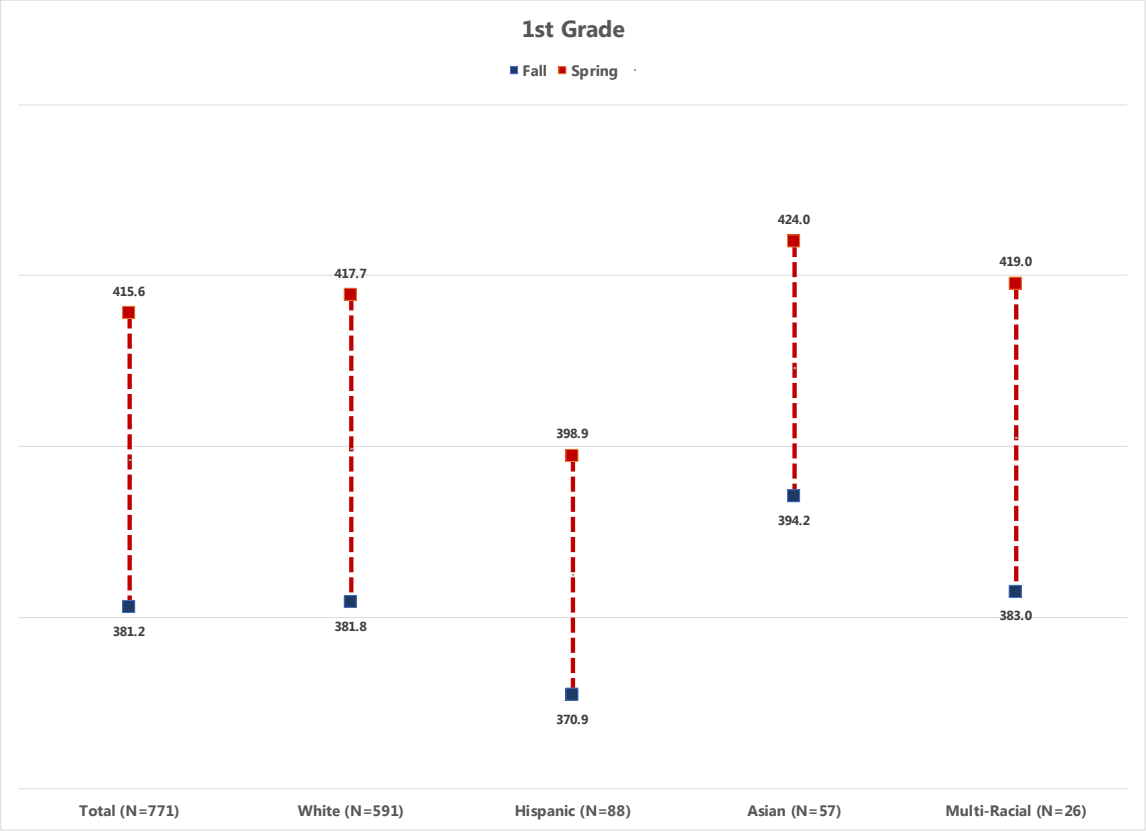

6th Grade
Fall
Spring
599.6
584.8
600.2
587.0
581.7
562.8
627.2
609.0
612.1
594.3
Total (N=777)
White (N=559)
Hispanic (N=115)
Asian (N=60)
Multi-Racial (N=28)

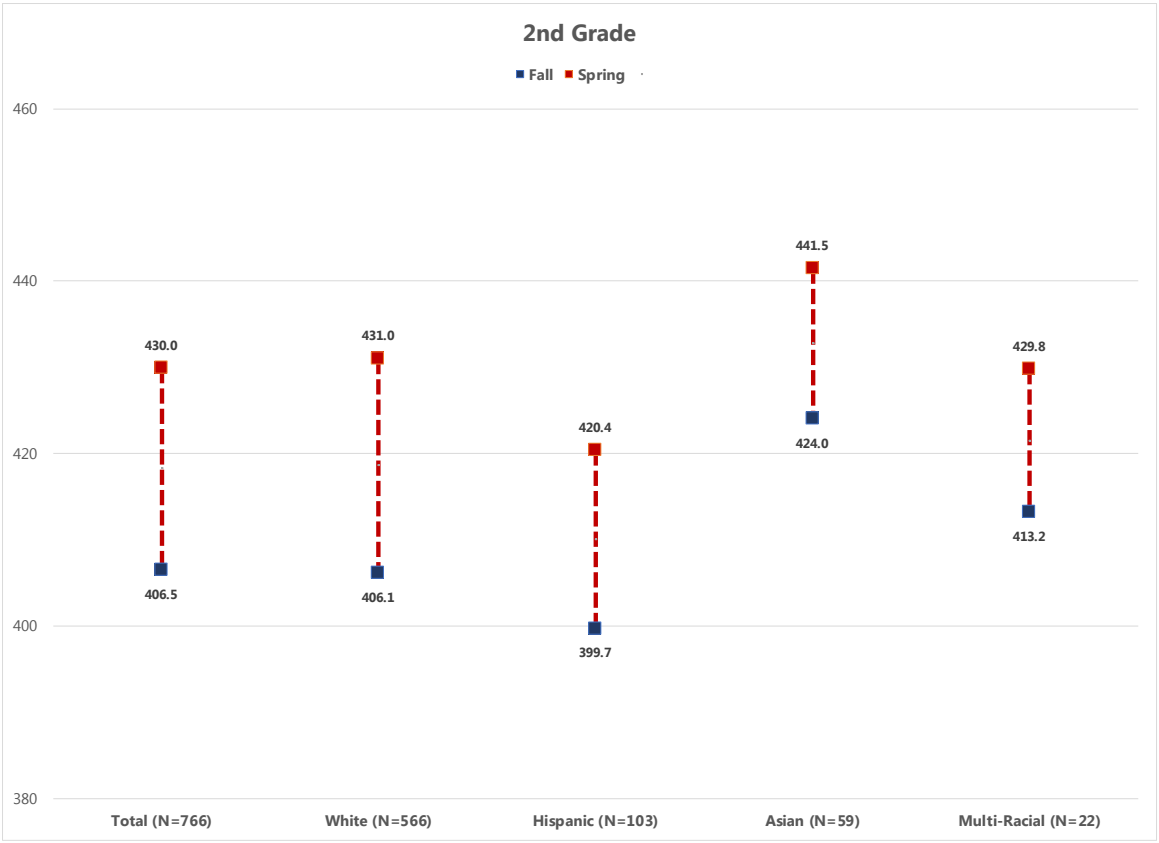

iReady Fall to Spring Growth
7th Grade
2021
Fall
Spring
614.2
592.7
617.2
596.3
586.7
559.4
633.4
617.8
634.5
619.2
600.4
575.1
Total (N=857)
White (N=620)
Hispanic (N=122)
Asian (N=72)
Multi-Racial (N=27)
Black (N=13)

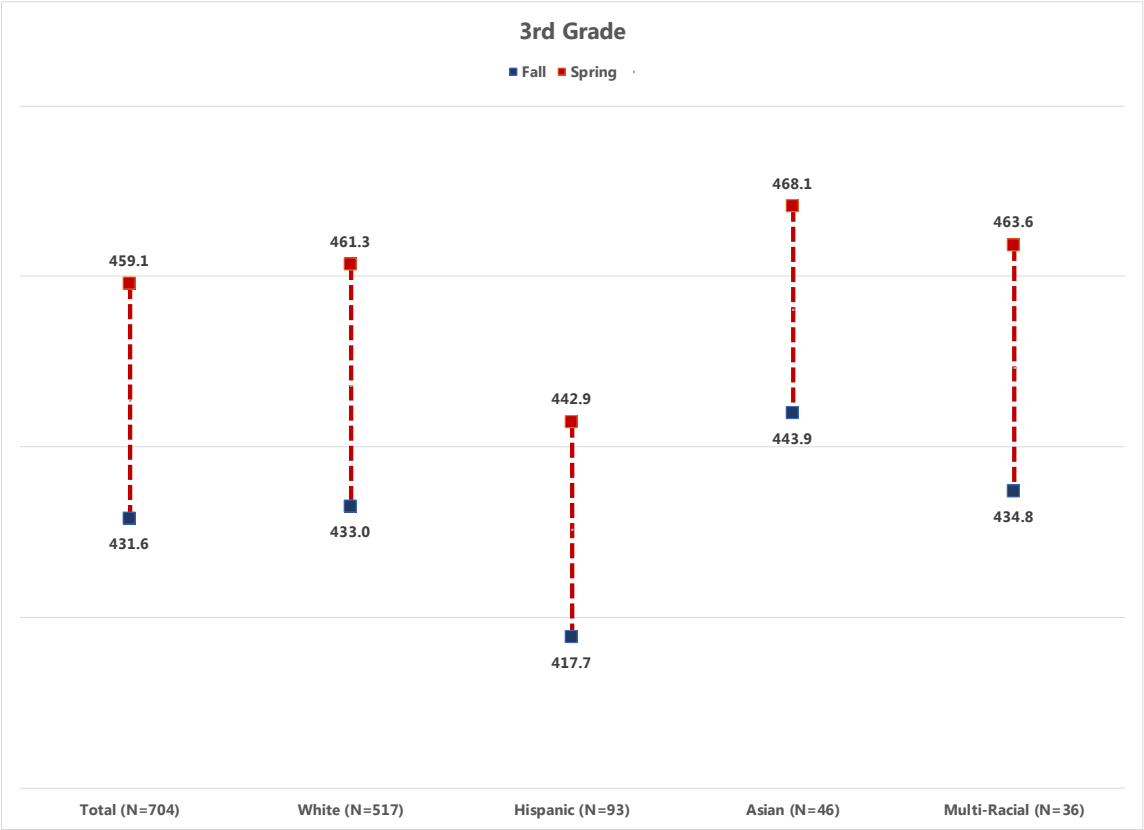

iReady Fall to Spring Growth
8th Grade
2021
Fall
Spring
627.5
612.8
629.3
613.6
607.0
597.1
640.0
626.2
637.9
631.8
589.2
577.6
Total (N=858)
White (N=668)
Hispanic (N=82)
Asian (N=63)
Multi-Racial (N=28)
Black (N=15)

Appendix D. Fall to Spring Growth in Mathematics during SY2021

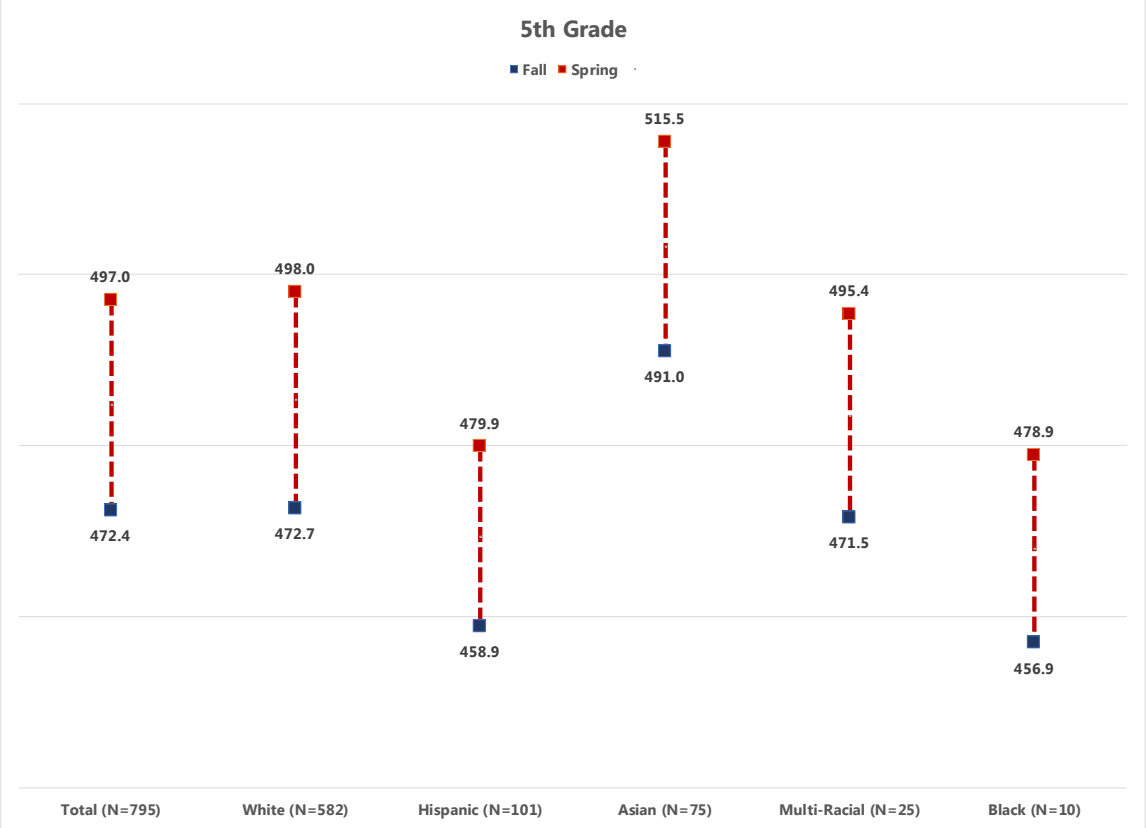




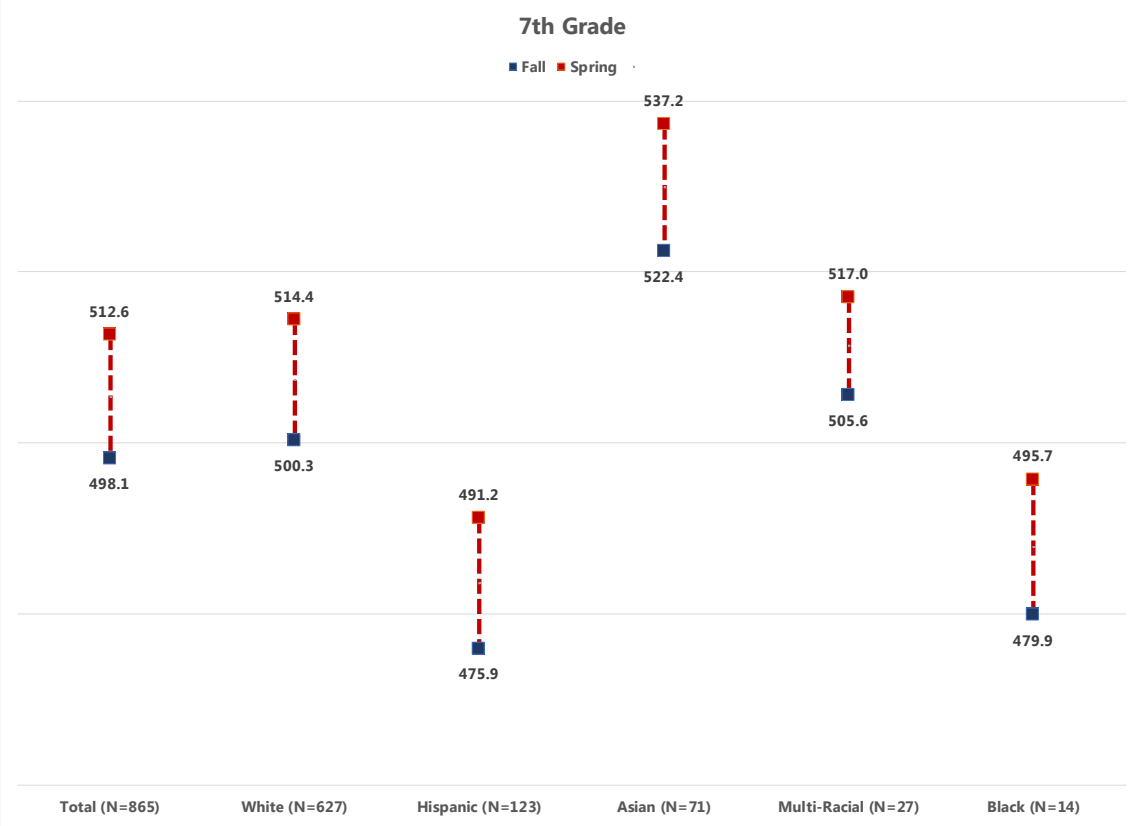

2nd Grade
Fall
Spring
460
440
420
400
380
430.0
406.5
431.0
406.1
420.4
399.7
441.5
424.0
429.8
413.2
Total (N=766)
White (N=566)
Hispanic (N=103)
Asian (N=59)
Multi-Racial (N=22)

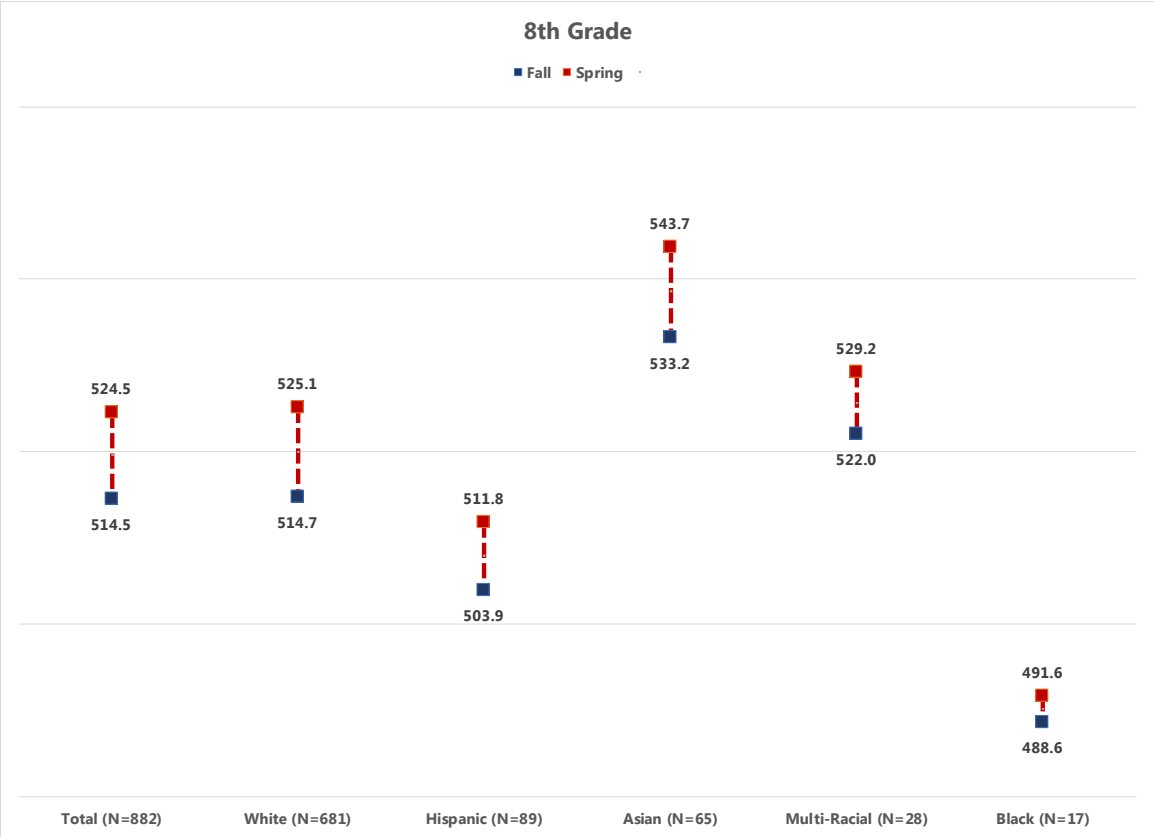

3rd Grade
Fall
Spring
459.1
431.6
461.3
433.0
442.9
417.7
468.1
443.9
463.6
434.8
Total (N=704)
White (N=517)
Hispanic (N=93)
Asian (N=46)
Multi-Racial (N=36)

4th Grade
Fall
Spring
481.4
452.9
484.0
455.1
464.4
437.4
493.7
464.6
482.2
453.2
445.1
428.6
Total (N=805)
White (N=585)
Hispanic (N=100)
Asian (N=65)
Multi-Racial (N=34)
Black (N=16)


5th Grade
Fall
Spring
497.0
472.4
498.0
472.7
479.9
458.9
515.5
491.0
495.4
471.5
478.9
456.9
Total (N=795)
White (N=582)
Hispanic (N=101)
Asian (N=75)
Multi-Racial (N=25)
Black (N=10)

6th Grade
Fall
Spring
503.8
489.0
504.7
489.5
486.7
473.3
528.6
512.5
511.9
499.7
Total (N=792)
White (N=565)
Hispanic (N=120)
Asian (N=61)
Multi-Racial (N=30)


7th Grade
Fall
Spring
512.6
498.1
514.4
500.3
491.2
475.9
537.2
522.4
517.0
505.6
495.7
479.9
Total (N=865)
White (N=627)
Hispanic (N=123)
Asian (N=71)
Multi-Racial (N=27)
Black (N=14)


8th Grade
Fall
Spring
524.5
514.5
525.1
514.7
511.8
503.9
543.7
533.2
529.2
522.0
491.6
488.6
Total (N=882)
White (N=681)
Hispanic (N=89)
Asian (N=65)
Multi-Racial (N=28)
Black (N=17)

References

Baker, T. J. (2021). *The Impact of an Emergent Discipline Culture on Teacher Perceptions of School Climate*. Concordia University Chicago,

Blanton, M., Stephens, A., Knuth, E., Gardiner, A. M., Isler, I., & Kim, J.-S. (2015). The Development of Children's Algebraic Thinking: The Impact of a Comprehensive Early Algebra Intervention in Third Grade. *Journal for Research in Mathematics Education JRME, 46*(1), 39-87. doi:10.5951/jresematheduc.46.1.0039

Bourke, R., & Loveridge, J. (2018). Using student voice to challenge understandings of educational research, policy and practice. In *Radical collegiality through student voice* (pp. 1-16): Springer.

Daly III, E. J., Wright, J. A., Kelly, S. Q., & Martens, B. K. (1997). Measures of early academic skills: Reliability and validity with a first grade sample. *School Psychology Quarterly, 12*(3), 268.

Daugaard, H. T., Cain, K., & Elbro, C. (2017). From words to text: inference making mediates the role of vocabulary in children's reading comprehension. *Reading and Writing, 30*(8), 1773-1788. doi:10.1007/s11145-017-9752-2

Duffy, M., & Watts, J. (2021). The world is literally on fire, so why are we so slow to react? Implementing Responsible Business in curricula. Giving students a voice in Sheffield Business School.

Gibbs, R., & Poskitt, J. (2010). Student engagement in the middle years of schooling (Years 7-10): A literature review report to the Ministry of Education.

Grodsky, E., Schaefer, P., Vaade, B., Calarco, J., Pyne, J., Bier, R., & Wertz, J. (2021). What makes a classroom a community? Teacher mindsets and student sense of belonging in middle school mathematics classes.

Grooms, A. A., & Childs, J. (2021). "We need to do better by kids": Changing routines in US schools in response to COVID-19 school closures. *Journal of Education for Students Placed at Risk (JESPAR), 26*(2), 135-156.

Johnson, A., Tyacke, C., & Marshall, B. (2021). Gender Differences in Perceptions of Self Esteem, Equity, and Teacher-Student Relationship.

Ladson-Billings, G. (2021). I'm here for the hard re-set: Post pandemic pedagogy to preserve our culture. *Equity & Excellence in Education, 54*(1), 68-78.

Lombardi, E., Traficante, D., Bettoni, R., Offredi, I., Giorgetti, M., & Vernice, M. (2019). The Impact of School Climate on Well-Being Experience and School Engagement: A Study With High-School Students. *Frontiers in Psychology, 10*. doi:10.3389/fpsyg.2019.02482

Longobardi, C., Settanni, M., Prino, L. E., Fabris, M. A., & Marengo, D. (2019). Students' psychological adjustment in normative school transitions from kindergarten to high school: Investigating the role of teacher-student relationship quality. *Frontiers in Psychology, 10*, 1238.

Marston, D., Pickart, M., Reschly, A., Heistad, D., Muyskens, P., & Tindal, G. (2007). Early literacy measures for improving student reading achievement: Translating research into practice. *Exceptionality, 15*(2), 97-117.

Mayes, E., Black, R., & Finneran, R. (2021). The possibilities and problematics of student voice for teacher professional learning: lessons from an evaluation study. *Cambridge Journal of Education, 51*(2), 195-212.

Mitra, D. (2018). Student voice in secondary schools: the possibility for deeper change. *Journal of Educational Administration*.

Mokhtari, K., & Niederhauser, D. S. (2013). Vocabulary and Syntactic Knowledge Factors in 5th Grade Students' Reading Comprehension. *International Electronic Journal of Elementary Education, 5*(2), 157-170.

Mulyadi, G., & Sudibjo, N. (2018). The effect of school culture, school climate, and transformational leadership on teachers' commitment. *Advanced Science Letters, 24*(11), 7970-7973.

O'Keeffe, C., & McNally, S. (2021). 'Uncharted territory': teachers' perspectives on play in early childhood classrooms in Ireland during the pandemic. *European Early Childhood Education Research Journal, 29*(1), 79-95.

Ouellette, G. P. (2006). What's meaning got to do with it: The role of vocabulary in word reading and reading comprehension. *Journal of Educational Psychology, 98*(3), 554–566.

Payne, A. A. (2018). Creating and Sustaining a Positive and Communal School Climate: Contemporary Research, Present Obstacles, and Future Directions. National Institute of Justice Report. *National Institute of Justice*.

Pendergast, D., Allen, J., McGregor, G., & Ronksley-Pavia, M. (2018). Engaging Marginalized, "At-Risk" Middle-Level Students: A Focus on the Importance of a Sense of Belonging at School. *Education Sciences, 8*(3). doi:10.3390/educsci8030138

Pourdavood, R., McCarthy, K., & McCafferty, T. (2020). The Impact of Mental Computation on Children's Mathematical Communication, Problem Solving, Reasoning, and Algebraic Thinking. *Athens Journal of Education, 7*(3), 241-253

Protopapas, A., Mouzaki, A., Sideridis, G. D., Kotsolakou, A., & Simos, P. G. (2013). The Role of Vocabulary in the Context of the Simple View of Reading. *Reading & Writing Quarterly, 29*(2), 168-202. doi:10.1080/10573569.2013.758569

Reardon, S. F., & Galindo, C. (2009). The Hispanic-White Achievement Gap in Math and Reading in the Elementary Grades. *American Educational Research Journal, 46*(3), 853-891. doi:10.3102/0002831209333184

Schildkamp, K. (2019). Data-based decision-making for school improvement: Research insights and gaps. *Educational Research, 61*(3), 257-273.

Terrier, C. (2020). Boys lag behind: How teachers' gender biases affect student achievement. *Economics of Education Review, 77*, 101981. doi:https://doi.org/10.1016/j.econedurev.2020.101981

Uslu, F., & Gizir, S. (2017). School belonging of adolescents: The role of teacher-student relationships, peer relationships and family involvement. *EDUCATIONAL SCIENCES-THEORY & PRACTICE, 17*(1).

Valiente, C., Parker, J. H., Swanson, J., Bradley, R. H., & Groh, B. M. (2019). Early elementary student-teacher relationship trajectories predict girls' math and boys' reading achievement. *Early Childhood Research Quarterly, 49*, 109-121. doi:https://doi.org/10.1016/j.ecresq.2019.05.001

VanDerHeyden, A. M., Witt, J. C., Naquin, G., & Noell, G. (2001). The reliability and validity of curriculum-based measurement readiness probes for kindergarten students. *School Psychology Review, 30*(3), 363-382.