

MEMORANDUM

June 30, 2020

TO: Margarita "Maggie" Gardea
Officer, Elementary Curriculum and Development

FROM: Allison Matney, Ed.D.
Officer, Research and Accountability

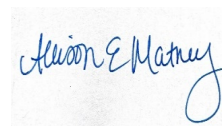
SUBJECT: **GUIDED MATH PILOT: EFFECTS ON HOUSTON INDEPENDENT SCHOOL DISTRICT SECOND- AND THIRD-GRADE STUDENTS' MATH PERFORMANCE, 2018–2019**

Guided Math is comprised of small groups of three to five and sometimes six students working together on specific math skills. During the 2017-2018 and 2018–2019 school year, the Houston Independent School District (HISD) piloted a guided approach to early math instruction focusing on Tier I instruction in ten schools, allowing teachers to support and learn from students' math understanding. This evaluation measured the impact of Guided Math Pilot on the math performance of second and third-grade students on the Renaissance 360 Universal Screener.

Key findings include:

- The percentage of second-grade students who performed at/above the 40th percentile benchmark in 2017–2018 increased between the BOY and the EOY in seven of eight pilot schools. The increases ranged between 5.7 and 25.7 percentage points.
- The percentage of third-grade students who performed at/above the 40th percentile benchmark in 2017–2018 increased between the BOY and the EOY in eight of ten pilot schools. The increases ranged from 6.5 and 16.0 percentage points.
- For the 2018–2019 school year, the percentage of second-grade students who performed at/above the 40th percentile benchmark increased from the BOY to the EOY in six of eight pilot schools. The increases ranged between 8.5 to 28.9 percentage points
- For the 2018–2019 school year, the percentage of third-grade students who performed at/above the 40th percentile benchmark increased in seven of ten pilot schools. The increases ranged between 7.5 and 25.0 percentage points.

Further distribution of this report is at your discretion. Should you have any further questions, please contact me at 713-556-6700.



AEM

Attachment

cc: Dr. Grenita Lathan

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RESEARCH

Educational Program Report

**GUIDED MATH PILOT: EFFECTS ON HOUSTON
INDEPENDENT SCHOOL DISTRICT SECOND-
AND THIRD-GRADE STUDENTS' MATH
PERFORMANCE, 2018-2019**



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EVALUATION REPORT

BUREAU OF PROGRAM EVALUATION

Guided Math Pilot: Effects on Houston Independent School District Second- and Third-Grade Students' Math Performance, 2018–2019

By Ted D. Serrant, Ph.D.

The purpose of this evaluation was to measure the impact of a Guided Math Pilot on the math performance of the Houston Independent School District (HISD) second- and third-grade students in ten pilot schools. Second- and third-grade teachers in these ten elementary schools completed professional development for the implementation of Guided Math Pilot. Students linked to these teachers were assessed on the Renaissance 360 Universal Screener at the Beginning of Year (BOY) and End of Year (EOY) to determine the percentage of students who made gains on the math tests. The results indicated that the percentage of second-grade students in seven of the eight pilot schools and third-grade students in eight of the ten pilot schools who performed at/above the 40th percentile benchmarks in 2017–2018 increased between the BOY and the EOY. The increases ranged between 5.7 and 25.7 percentage points in the second grade and 6.5 and 16.0 percentage points in the third grade. Similarly, results for the 2018–2019 school year indicated that the increase from the BOY to the EOY was between 8.5 to 28.9 percentage points in the second grade for six of eight schools and between 7.5 and 25.0 percentage points in the third grade for seven of ten schools. Given the positive increase in the percentage of students who performed at/above the 40th percentile benchmark, it can be recommended that Guided Math be extended to other similar schools in the district.

Background

Teaching and learning mathematics in the early grade, effectively, is critical. Math knowledge in the early grades predicts children's long-term math achievement in the primary grades and throughout their schooling (Clements & Sarama, 2009; 2013). However, teaching math skills appear to get far less attention than literacy in high-poverty classrooms (Gosner, 2018). Guided math has been identified as an effective approach to math instruction and sustained student performance in math.

Guided Math is comprised of a small group of three to five and sometimes six students working together on specific math skills. Guided Math groups are fluid, flexible depending on students' abilities and competencies, and change based on concepts to be learned (Newton, 2017). Guided Math is conducted during the math block and includes an introduction, activity time, and a wrap up including a debrief with the whole class.

The overall objective of Guided Math is to differentiate teaching, build students' fundamental building blocks for math, and specifically, meet the

needs of students in the Guided Math groups, while students outside those groups are working on math-related activities. Students' math needs must be assessed, and their performance monitored to identify the focus and composition of Guided Math groups. Guided Math groups are constituted based on the math data and information available for students at the time (Newtown, 2017).

The Houston Independent School District (HISD) piloted a guided approach to early math instruction in ten district schools, focusing on Tier I instruction which allows a teacher to support and learn about students' math understanding (Guided Math & Work Stations, 2018–2019). This approach reinforced each child's ability to learn and understand math at his or her rate of development. The implementation was grounded in the belief that all elementary school teachers can facilitate math learning through student engagement in (1) equitable learning experiences; (2) collaborations that foster a deep appreciation for math; (3) thinking that allows time to reflect, justify and reason; (4) rich learning tasks that facilitate positive and confident learners; (5) productive struggle and opportunities to learn from their mistakes; and, (6) opportunities to

model, teach, and explain what they know and do not know.

Guided Math implementation in HISD involved Guided Math Groups, student conferences, and the use of workstations (Guided Math and Work Stations, 2018–2019). Teachers used small groups to facilitate equitable learning through student engagement in rich learning tasks that aligned to current content and differentiated learning through active questioning or probes. Teachers also facilitated one-on-one conferences and students practiced current or spiraled content at four work stations: problem-solving (current), writing in math (current), numerical fluency ((spiraled), and technology and games (spiraled).

Teachers had access to twenty mini-lessons that guided four instructional areas – math mindset, workstations, Guided Math groups, and conferences. Mini-lessons included (1) active listening, (2) asking for help, (3) workstation routines and procedures, (4) workstation management charts, (5) Guided Math group expectations, (6) introducing workstations, (7) Guided Math and three Guided Math workstation lessons and (8) student conferences and four Guided Math workstations lessons.

Teachers were exposed to an initial two-day professional development (PD) in Grade 2 and 3 Guided Math. Subsequent PDs were held in August and October 2018 in K–3 Guided Math Training Pilot, 2017–2018 and 2018–2019. Guided Math and Workstation Framework Overview and Guided Math Table with Anecdotal Records were also held in October 2018. In initial two-day PD was 14 hours and subsequent PDs lasted two to three hours each.

This evaluation was designed to assess and the effect of Guided Math Pilot on the math performance of second- and third-grade students whose teachers were enrolled in the Guided Math professional development program and who implemented Guided Math in ten HISD schools.

The evaluation was guided by four key questions:

1. What were the demographic and educational characteristics of Guided Math students in the evaluation samples?
2. How were teachers prepared to deliver the Guided Math Pilot?
3. What was the performance of Guided Math students in Guided Math Pilot schools?
4. What were the differences in the BOY and EOY math performance among second- and third-grade Guided Math student performances in 2017–2018 and 2018–2019?

Literature Review

Rosenshine (2012) identified ten research-based math instructional strategies that all teachers should

know, which includes guiding students' practice. The most successful teachers spend more time guiding practice, and students were better prepared for independent work when teachers provided adequate instruction during guided practice (Rosenshine, 2012). Students' perception, parental perception of student's experiences, and teachers' perception of guided math instruction using surveys, interviews, and observation data found positive students' responses and teacher's perceptions (Knox, 2018). Among the first-graders in the study, Guided Math allowed for greater differentiation in instruction according to teachers, and parents reported that they saw improvements in their children's progress throughout the year (Knox, 2018).

Thirty Title I elementary schools in one suburban Atlanta school district were used to determine the relationship between Guided Math implementation and students' achievement in math based on the percentage of students who met or exceeded the standard on the Georgia Mathematics CRCT (Fielder, 2013). The percentage of students who met or exceeded the standard on the Math CRCT increased from 2010 to 2011. However, the result indicated that there was no statistically significant difference in the percentage of students who met or exceeded the standards from 2010 to 2011 (Fielder, 2013).

Teachers in Trinidad and Tobago were exposed to a two-week field teaching practice on small group instruction in mathematics to determine the effect of differentiated math instruction on the ability of prospective teachers to meet students' math needs (John, Joseph, & Sampson, 2014). Results indicated that teachers felt prepared to better meet student needs and would continue to use the information and experience gained. However, some teachers felt they needed strategies to manage the class during Guided Math with small groups (John, Joseph, & Sampson, 2014).

Guided instruction appeared to be more effective for low-performing students than structured instructions especially for students in regular education according to a study of 75 students, ages seven to thirteen, from regular and special education classrooms (Kroesbergen & Van Luit, 2002). Students were exposed to guided and structured math interventions and compared to regular math instruction in teaching multiplication. Special education students appeared to benefit most from structured instructions concerning automaticity with multiplication problems. A three-month follow-up test confirmed the long-term effects of the intervention for both groups (Kroesbergen & Van Luit, 2002).

The research on Guided Math in lower elementary schools is sparse. Guided Math appeared to facilitate greater differentiation in instruction that was associated with improvements in specific math tasks and operation. Parents and teachers had positive feedback

on the use and improvement of students' learning using Guided Math. However, teachers appeared to need class management strategies for implementing small group Guided Math instruction. Site visits and observations would have provided data on the classroom management and grouping for Guided Math instruction.

Method

This study uses a repeated-measures design to evaluate the impact/effect of Guided Math on the math performance of second and third-grade students in ten HISD schools. A repeated measures design uses the difference in a pretest (before) and posttest (after) scores or performance to measure the impact of a program or intervention. Students' math benchmark performance on the Renaissance 360 Universal Screener at the beginning of the year (BOY) (pretest) and the end of year (EOY) (posttest) were used as the outcome measure. Teachers self-selected into the PD program. Such teachers are considered innovators and are actively seeking new ideas that challenge their existing thoughts on teaching and learning. These teachers do not see change as flaws in themselves and are risk-takers (Bobrowsky as cited in Holloway, 2006).

Data Collection

Teachers who completed the PD were linked to their students, student attributes, and math performance on the Renaissance 360 Universal Screener¹ data. Student and teacher links were retrieved from the Chancery Roster files archived in the Research and Accountability Department Microsoft Access database. Student math performance was retrieved from the SIS Adhoc using IBM Cognos². Student attributes included demographic and educational data: gender, ethnicity and race, economic status, gifted and talented (G/T) designation, English proficiency, special education, and so on were also retrieved from SIS Adhoc. The math scores were also retrieved from SIS Adhoc using Cognos. Guided Math teacher-student links were identified using 2017–2018 and 2018–2019 Chancery Roster files, which were then linked to the Renaissance 360 Universal Screener using unique student IDs and the students' attributes data file.

A total of 607 second-grade and 728 third-grade students made up the sample in the 2017–2018 school year and 523 second-grade and 594 third-grade students in the 2018–2019 school year. **Table 1** and **Table 2** show the demographic and educational characteristics of the study population. A total of 599 second-grade and 714 third-grade students in the 2017–2018 study

population had both BOY and EOY assessment scores. All students in the study sample for 2018–2019 had both scores. These students constitute the sample and were subject to the repeated measures analyses.

Data Analysis

Students' BOY scores were linked to their EOY scores on the Universal Screener. Only second- and third-grade students who were tested and had both scores were included in the study. Pre and post differences in the percentage of student attainment by benchmark (At/Above, On Watch, Intervention, Urgent Intervention), grades, and schools were used as measures of the program's impact. Data are presented in tables and charts.

Limitations

Other math programs were likely implemented in HISD that may have impacted students' performance. To minimize that likelihood, only teachers who completed the PD and schools that implemented the Guided Math Pilot were included in the study to control for the effects of externalities on the program outcomes. The repeated-measures design also controlled for externalities by using the same students before and after scores to determine the pilot program effect.

Result

What were the demographic and educational profiles of Guided Math student participants in the evaluation samples?

Most students, as shown in Table 1, in the 2017–2018

Table 1. Educational and Demographic profile of HISD Guided Math Students, 2017–2018

Demographic & Educational Attributes		2017-2018			
		2 nd Grade		3 rd Grade	
		n	%	n	%
Gender	Female	298	49.0	364	49.8
	Male	309	50.8	364	49.8
Ethnicity	Asian	13	2.1	19	2.6
	Black	110	18.1	173	23.7
	Hispanic	405	66.6	478	65.4
	White	71	11.7	52	7.1
Economically Disadvantaged	No	144	23.7	155	21.3
	Yes	463	76.3	573	78.7
At-Risk	No	111	18.3	354	48.6
	Yes	496	81.7	374	51.4
Special Education	No	580	95.6	693	95.2
	Yes	27	4.4	35	4.8
Limited English Proficiency	No	334	54.9	405	55.4
	Yes	273	44.9	323	44.2
Gifted & Talented	No	516	85.0	623	85.6
	Yes	91	15.0	105	14.4
Home Language	English	278	45.7	332	45.4
	Spanish	320	52.6	382	52.3
	Other	10	1.6	17	2.3

Source: SIS Adhoc downloaded from IBM Cognos on 10/1/2019

Note. Percentages may not add to 100 due to missing data

¹ Renaissance 360 Universal Screener is an online formative assessment administered to HISD students at the beginning of the year (BOY), middle of the year (MOY), and end of the year (EOY)

² Cognos is an International Business Machine (IBM) data query software used to retrieve data from HISD Datawarehouse.

second- and third-grade study sample were Hispanic (66.6% and 65.5%, respectively), at risk for school dropout (81.7% and 52.4%, respectively) or came from homes where Spanish was the predominant language spoken (52.6 % and 52.3%, respectively). Most second- and third-grade students in the 2017–2018 evaluation sample were also economically disadvantaged (76.3% and 78.7%, respectively). About 44 percent of students in the 2017–2018 second and third-grade samples had limited English proficiency (LEP).

Table 2 shows the demographic and educational characteristics of the 2018–2019 second- and third-grade samples. Most students in the sample were female at both the second and third grades (percentages??). Most were economically-disadvantaged (77.1% and 80.3%, respectively), at-risk for school dropout (80.1% and 66.8%, respectively), or came from homes where Spanish was predominantly spoken (and 68.3% and 62.6%, respectively). Most 2nd- and 3rd-grade students were Hispanic (60.8% and 59.3, respectively). Fewer students in the sample were gifted and talented (19.9% and 15.8%, respectively) than

those who were not, and were special education students (4.2% and 4.7%, respectively) and about one-third had limited English proficiency (LEP).

Table 2. Educational and Demographic Profile of HISD Guided Math Students, 2018–2019

Demographic and Educational Attributes		2018-2019			
		2 nd Grade		3 rd Grade	
		n	%	n	%
Gender	Female	268	51.2	301	50.7
	Male	255	48.8	293	49.3
Ethnicity	Asian	5	1.0	17	2.9
	Black	137	26.2	150	25.3
	Hispanic	318	60.8	352	59.3
	White	50	9.6	63	10.6
Economic Disadvantaged	No	120	22.9	117	19.7
	Yes	403	77.1	477	80.3
Gifted & Talented	No	419	80.1	500	84.2
	Yes	104	19.9	94	15.8
At-Risk	No	104	19.9	197	33.2
	Yes	419	80.1	397	66.8
Special Education	No	501	95.8	566	95.3
	Yes	22	4.2	28	4.7
LEP	No	367	70.2	399	67.2
	Yes	156	29.8	195	32.8
Home Language	Spanish	163	31.2	213	35.9
	English	357	68.3	372	62.6
	Other	3	0.6	9	1.5

Source: Research and Accountability PEIMS Microsoft Access Database of Fall Snapshot, 2018–2019

How were teachers prepared to deliver Guided Math instruction?

The HISD elementary math department selected ten schools to pilot Guided Math in the second and third grades. The schools are listed in **Appendix A**, p. 10. Data collected from HISD OneSource that archives teachers' participation in professional development showed that 54 teachers underwent professional development (PD) in K–3 Guided Math Training Pilot for the 2018–2019 school year.

The PD was conducted in August and October 2018. Two hours of PD were conducted in October and eight hours in August. The group was exposed to 448 hours of Guided Math PD. Teachers had between two and ten hours of Guided Math PD. Teachers who completed both sessions had 10 total PD hours. Most teachers (n=38) had eight hours of Professional Development, fourteen had 10 hours of PD, which

meant that they completed both sessions. Two teachers had two hours of PD, this falls short of the minimum number of PD hours (14 hours) research has confirmed is required to move student performance (Yoon, 2007).

Institute of Education Sciences review of the evidence on teacher professional development and student achievement concluded that an average of 49 hours in nine studies boost student achievement by 21 percentile points. The Institute reviewed more than 1,300 students and found that studies with more than 14 hours of PD showed positive and significant effects on student achievement (Yoon, 2007). It was also found that effective PD was accompanied by at least one year's PD follow-up or support (Yoon, 2007).

What was the performance of Guided Math students in HISD schools?

Figure 1 shows the BOY and EOY performance of second grade Guided Math students by schools for the 2017–2018 school year. Seven of the Guided Math pilot schools showed increases in the percentage of students who performed at or above benchmark which is at or above

the 40 percentile. It is important to note that schools with increases in the percentage of students who performed at or above the benchmark had a corresponding reduction in students who either On Watch or required Intervention.

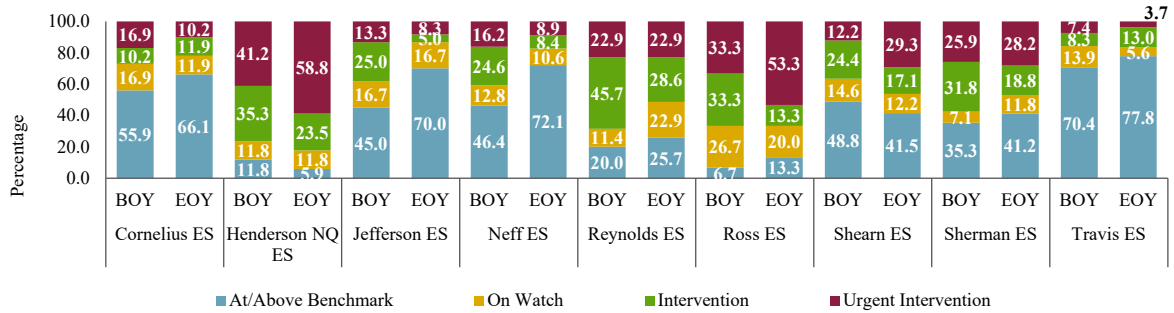


Figure 1. Comparative Performance of Second Grade Guided Math Students at the BOY and EOY, HISD, 2017–2018

Travis had the highest percentage of students who performed At/Above benchmark (77.8%) at the EOY, followed by Neff (72.1%) and Jefferson (70.0%). Shearn and Henderson NQ elementary school showed decreases in the percentage of students whose math

performance was at/above the benchmark. Henderson, Ross, and Sherman elementary schools showed increases in the percentage of students who required urgent intervention at the EOY compared to the BOY in 2017–2018.

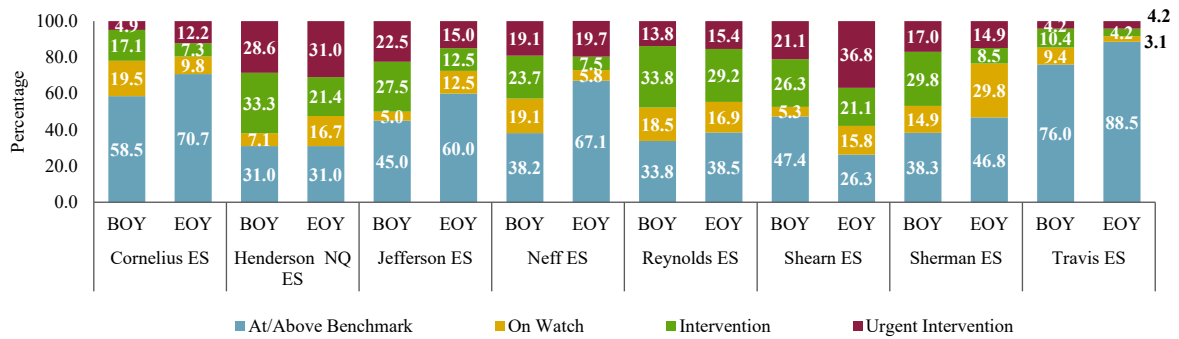


Figure 2. Comparative Performance for HISD Second Grade Guided Math Students at the BOY and EOY, 2018–2019

Figure 2 shows the 2018–2019 performance of second-grade students in the Guided Math pilot. Except for Shearn and Henderson NQ elementary schools, all schools showed increases in the percentage of second-grade students whose math performance was at or above benchmark on Renaissance 360 Universal Screener. There were no changes for Henderson NQ and the proportion of students who performed at/above benchmark decreased for Shearn. Travis had the highest

percentage of second-grade students who performed at/above the math benchmark (88.5%) at the EOY in 2018–2019, followed by Cornelius (71.7%) and Neff (67.1%) elementary schools. Notwithstanding, some schools, except Jefferson and Sherman, showed increases or no change in the percentage of second-grade students who needed urgent intervention at the EOY in 2018–2019.

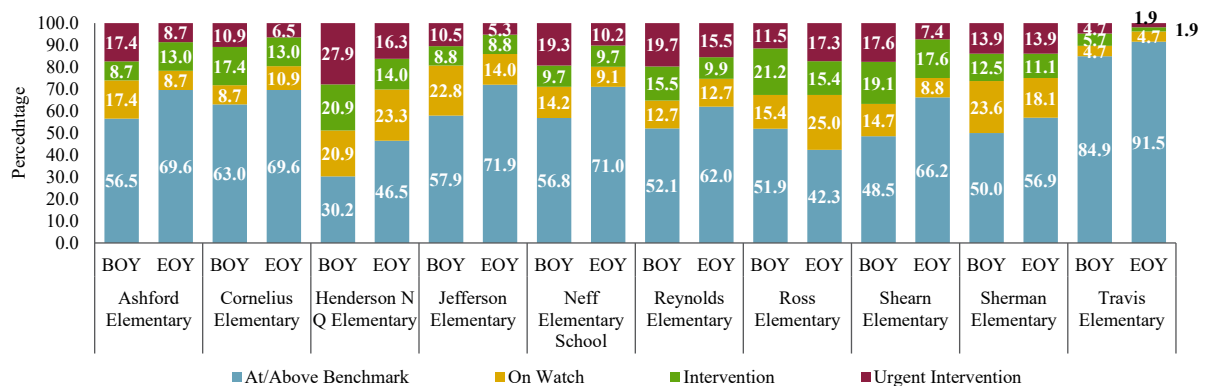


Figure 3. Comparative Performance for Third Grade Guided Math Students at the BOY and EOY, 2017–2018

All schools (Figure 3) except Ross elementary showed an increase in the proportion of students whose math performance was at or above benchmark on the Renaissance 360 Universal Screener by the EOY in 2017–2018. Of these, Travis Elementary had a higher percentage (91.5%) followed by Jefferson elementary (71.9%), and Neff elementary (70.0%). All schools except for Sherman and Ross elementary showed

decreases in the percentage of students requiring urgent interventions. Ross had an increase and the percentage for Sherman remained unchanged between the BOY and the EOY for the 2017–2018 school year. Ross, however, showed a reduction in the percentage of students who required intervention and an increase in the percentage of third-grade students who were On Watch.

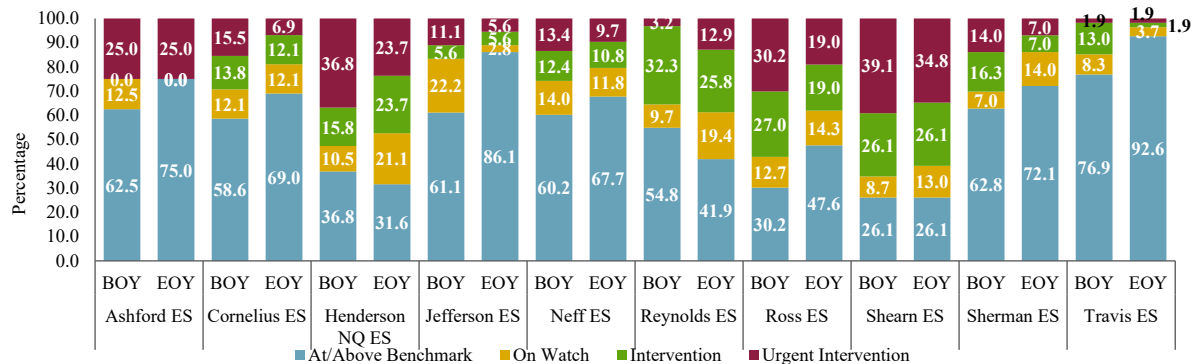


Figure 4. Comparative Performance of HISD Third-Grade Guided Math Students at the BOY and EOY, 2018–2019

According to **Figure 4**, 92.6 percent of third-grade Guided Math students in Travis elementary performed at/above benchmark at the EOY for 2018–2019 compared to 76.9 percent at the BOY for the same year. Over 80% of students at Jefferson elementary performed at or above benchmark in 2018–2019. Over 70% of students in two other schools, namely Ashford elementary and Sherman elementary performed at or above the benchmark in 2018–2019.

What were the differences in the BOY and EOY HISD second- and third-grade Guided Math Pilot student performance for 2017–2018 and 2018–2019?

Figure 5 and **Figure 6** show the BOY and EOY differences in the percentage of Guide math students by school, who met the Renaissance 360 benchmarks for the 2017–2018 school year.

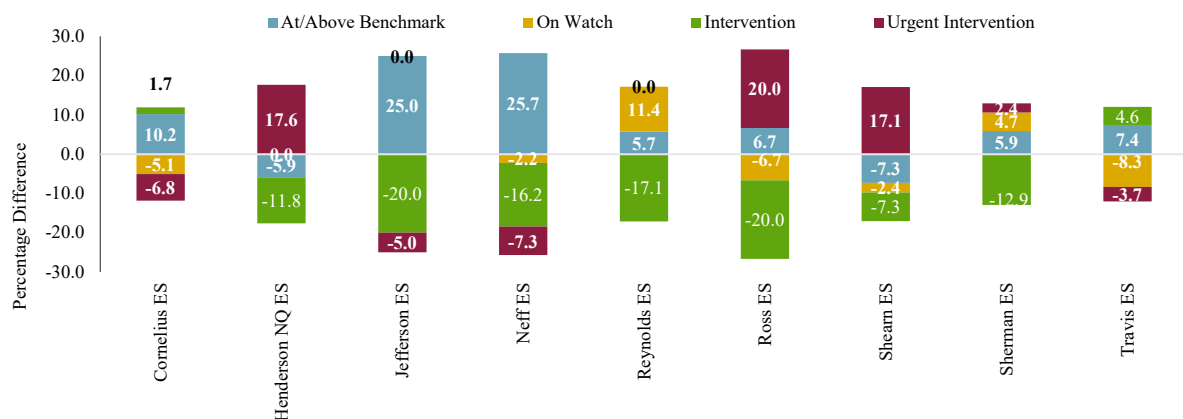


Figure 5. Proportional BOY to EOY Difference in Math Performance of Second-Grade Guided Math Students, HISD, 2017–2018

Seven of the nine schools in Figure 5 showed BOY to EOY increases in the percentage of Guided Math students who performed at or above the 40th percentile benchmark. Of these seven schools, two schools had at least a 25-percentage-points increase in students who

performed at or above the 40th percentile benchmark and five schools, showed increases ranging from 5.7 to 10.2 percentage points from the BOY to the EOY in students who performed at or above the 40th percentile benchmark on the Renaissance 360 Universal Screener.

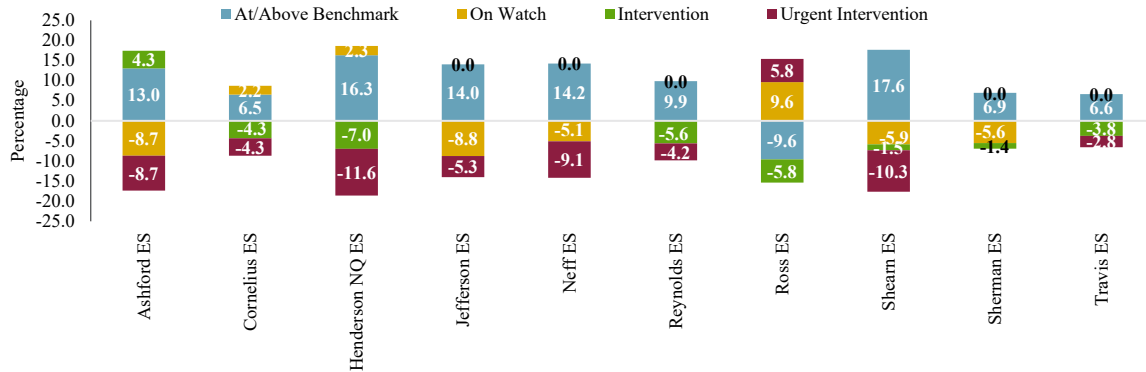


Figure 6. Proportional BOY to EOY Difference in Math Performance of Third-Grade Guided Math Students, HISD, 2017–2018

MDN = More Development Needed; ME = Met Expectations; AD = Advanced Reading

Nine of the ten Guided Math schools showed increases in the percentage of students who performed at or above benchmark on the 3rd-grade Renaissance 360 Math Universal Screener during the 2017–2018 school year. Of these nine schools, five had double-

digit increases ranging from 13.0 to 17.6 percentage points. The remaining four had increases ranging from 6.5 to 9.9 percentage points on the 3rd-grade Renaissance 360 universal screener for the 2017–2018 school year.

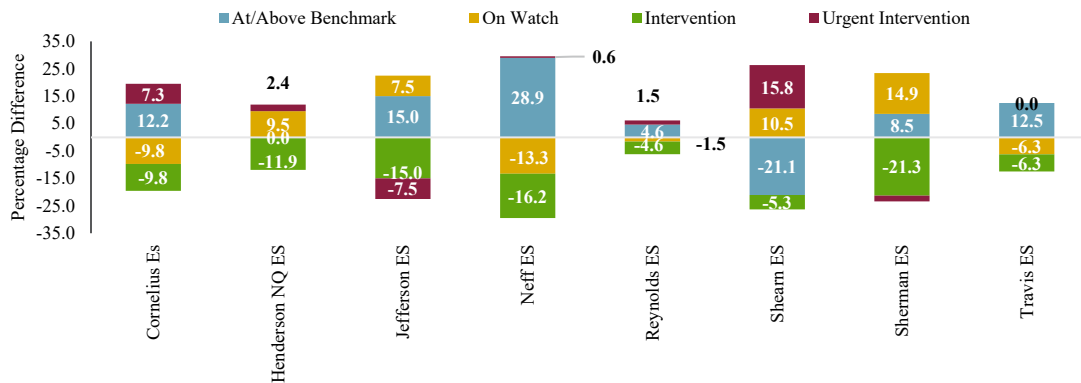


Figure 7. Proportional BOY to EOY Difference in Math Performance of Second-Grade Guided Math Students, HISD, 2018–2019

As shown in Figure 7, six of the eight Guided Math schools showed BOY to EOY increases in the percentage of second-grade Guided Math students who performed at or above the 40th percentile benchmark on

the Renaissance 360 Universal Screener for the 2018–2019 school years. Of these six schools, four had double-digit BOY to EOY increases ranging from 10.5 to 28.9 percentage points.

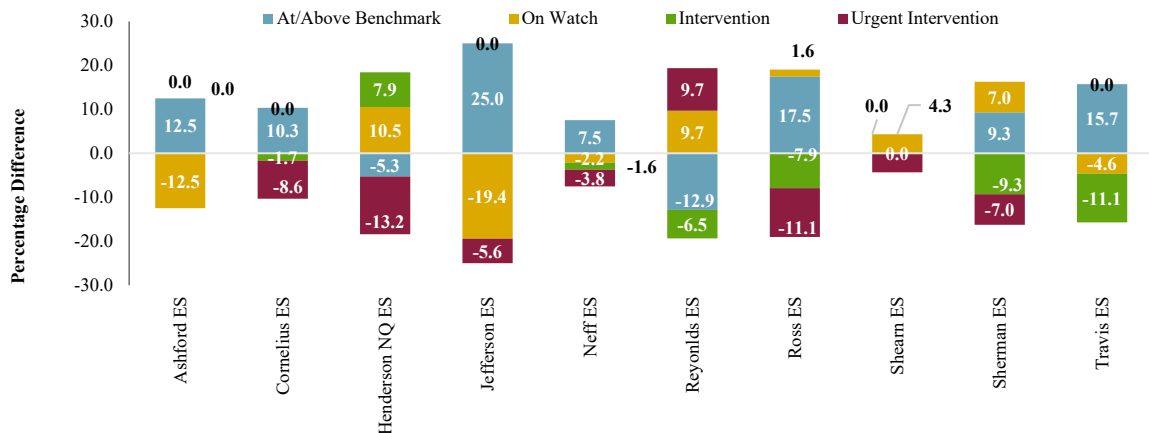


Figure 8. Proportional BOY to EOY Difference in Math Performance of Third-Grade Guided Math Students, HISD, 2018–2019

Seven of the ten Guided Math schools shown in **Figure 8**, had BOY to EOY increases in the percentage of third-grade Guided Math students who performed at or above the 40th percentile benchmark on the Renaissance 360 universal screener for the 2018–2019 school year. Of these seven schools, five had double-digit increases ranging from 10.3 to 25.0 percentage points. Two schools had increases of 7.5 and 9.3 percentage points.

Discussion

The purpose of this evaluation was to determine the impact of the Guided Math Pilot on the math performance of second- and third- grade students in ten HISD schools. The evaluation used a repeated-measures design on students' BOY and EOY math performance on the Renaissance 360 Universal Screener.

The Guided Math pilot results from the 2017–2018 and 2018–2019 school years indicated substantial improvement in the percentage of students' who performed at or above the benchmark. The two-year performances indicate the effectiveness of the program in improving the math performance of students in at least six of the ten schools each year. While students' performance in this study was not linked to the extent of initial teacher PD. Personal communication with program managers indicated that there were follow-up workshops, meetings, supervisory, and walkthrough visits during the implementation of Guided Math Pilot. Follow-up support is critical to effective program implementation and increasing the likelihood of program impact on students' performance (Yoon, 2007).

Increases in the percentage of students in this study who performed at or above the benchmark at the second and third-grade levels in both years are consistent with the findings from the Fielder (2003) study in Atlanta, Georgia. While this evaluation is not a longitudinal study, in that it did not follow the same Guided Math students over multiple years, other studies confirmed that the effects of the Guided Math approach persist (Kroesbergen & Van Luit, 2002).

Schools that may not have shown increases in the percentage of students who performed at or above benchmarks between the BOY and the EOY, showed improvement otherwise. In 2018–2019, Henderson NQ Elementary, for example, showed a decrease in the percentage of third-grade students who performed at or above benchmark but a reduction in the percentage of students who needed urgent intervention. Shearn Elementary also had a reduction in the percentage of third-grade students between the BOY and the EOY who needed urgent intervention during the same school

year but showed no increase in the percentage who performed at or above benchmark

Renaissance 360 data was not available for all the schools during the 2017–2018 school year. Teacher attrition and the challenge of tracking teacher movements were issues. Another related issue may be the commitment to monitoring students' performance using the universal screener at both the BOY and EOY. Student missing data for one of these periods were dropped from the data set for analysis. Tracking students' performance to determine their math needs is essential for group placement and success during Guided Math (Newton, 2017).

Based on previous research (Fielder, 2013; Kroesbergen & Van Luit, 2002; and Rosenshine, 2012) and the findings from this evaluation, Guided Math should be implemented in schools of similar demographic and educational characteristics. Research done by Kroesbergen and Van Lui (2002) confirms the long-term effect on the math performance of low-income students.

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<p>For additional information, contact the HISD Department of Research and Accountability at 713- 556-6700 or e-mail: research@houstonisd.org.</p>

Appendix A

List of HISD Guided Math Schools, 2017–2018 and 2018–2019

Ashford Elementary School

Cornelius Elementary

Jefferson Elementary School

Henderson NQ Elementary School

Neff Elementary School

Reynolds Elementary School

Ross Elementary School

Shearn Elementary School

Sherman Elementary School

Travis Elementary School

Appendix B. Performance Tables

Table 3. BOY and EOY Second-Grade Students’ Performance on the Renaissance 350 Universal Screener in Guided Math Pilot School, 2017–2018																																				
Performance Level	Cornelius ES				Henderson NQ ES				Jefferson ES				Neff ES				Reynolds ES				Ross ES				Shearn ES				Sherman ES				Travis ES			
	BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY					
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%				
At/Above Benchmark	33	55.9	39	66.1	2	11.8	1	5.9	27	45.0	42	70.0	83	46.4	129	72.1	7	20.0	9	25.7	1	6.7	2	13.3	20	48.8	17	41.5	30	35.3	35	41.2	76	70.4	84	77.8
On Watch	10	16.9	7	11.9	2	11.8	2	11.8	10	16.7	10	16.7	23	12.8	19	10.6	4	11.4	8	22.9	4	26.7	3	20.0	6	14.6	5	12.2	6	7.1	10	11.8	15	13.9	6	5.6
Intervention	6	10.2	7	11.9	6	35.3	4	23.5	15	25.0	3	5.0	44	24.6	15	8.4	16	45.7	10	28.6	5	33.3	2	13.3	10	24.4	7	17.1	27	31.8	16	18.8	9	8.3	14	13.0
Urgent Intervention	10	16.9	6	10.2	7	41.2	10	58.8	8	13.3	5	8.3	29	16.2	16	8.9	8	22.9	8	22.9	5	33.3	8	53.3	5	12.2	12	29.3	22	25.9	24	28.2	8	7.4	4	3.7
Total (n)	59	-	59	-	17	-	17	-	60	-	60	-	179	-	179	-	35	-	35	-	15	-	15	-	41	-	41	-	85	-	85	-	108	-	108	-

Table 4. BOY and EOY Third-Grade Students’ Performance on the Renaissance 350 Universal Screener in Guided Math Pilot School, 2017–2018																																								
Performance Level	Ashford ES				Cornelius ES				Henderson NQ ES				Jefferson ES				Neff ES				Reynolds ES				Ross ES				Shearn ES				Sherman ES				Travis ES			
	BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY					
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%				
At/Above Benchmark	13	56.5	16	69.6	29	63.0	32	69.6	13	30.2	20	46.5	33	57.9	41	71.9	100	56.8	125	71.0	37	52.1	44	62.0	27	51.9	22	42.3	33	48.5	45	66.2	36	5.0	41	56.9	90	84.9	97	91.5
On Watch	4	17.4	2	8.7	4	8.7	5	10.9	9	20.9	10	23.3	13	22.8	8	14.0	25	14.2	16	9.1	9	12.7	9	12.7	8	15.4	13	25.0	10	14.7	6	8.8	17	2.4	13	18.1	5	4.7	5	4.7
Intervention	2	8.7	3	13.0	8	17.4	6	13.0	9	20.9	6	14.0	5	8.8	5	8.8	17	9.7	17	9.7	11	15.5	7	9.9	11	21.2	8	15.4	13	19.1	12	17.6	9	1.3	8	11.1	6	5.7	2	1.9
Urgent Intervention	4	17.4	2	8.7	5	10.9	3	6.5	12	27.9	7	16.3	6	10.5	3	5.3	34	19.3	18	10.2	14	19.7	11	15.5	6	11.5	9	17.3	12	17.6	5	7.4	10	1.4	10	13.9	5	4.7	2	1.9
Total (n)	23	-	23	-	46	-	46	-	43	-	43	-	57	-	57	-	176	-	176	-	71	-	71	-	52	-	52	-	68	-	68	-	72	-	72	-	106	-	106	-

Table 5. BOY and EOY Second-Grade Students’ Performance on the Renaissance 350 Universal Screener in Guided Math Pilot School, 2018–2019																																
Performance Level	Cornelius ES				Henderson NQ ES				Jefferson ES		Jefferson ES		Neff ES				Reynolds ES				Shearn ES				Sherman ES				Travis ES			
	BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%			n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
At/Above Benchmark	24	58.5	29	70.7	13	31.0	13	31.0	18	45.0	24	60.0	66	38.2	116	67.1	22	33.8	25	38.5	9	47.4	5	26.3	18	38.3	22	46.8	73	76.0	85	88.5
Intervention	7	17.1	3	7.3	14	33.3	9	21.4	11	27.5	5	12.5	41	23.7	13	7.5	22	33.8	19	29.2	5	26.3	4	21.1	14	29.8	4	8.5	10	10.4	4	4.2
On Watch	8	19.5	4	9.8	3	7.1	7	16.7	2	5.0	5	12.5	33	19.1	10	5.8	12	18.5	11	16.9	1	5.3	3	15.8	7	14.9	14	29.8	9	9.4	3	3.1
Urgent Intervention	2	4.9	5	12.2	12	28.6	13	31.0	9	22.5	6	15.0	33	19.1	34	19.7	9	13.8	10	15.4	4	21.1	7	36.8	8	17.0	7	14.9	4	4.2	4	4.2
Total (n)	41	-	41	-	42	-	42	-	40	-	40	-	173	-	173	-	65	-	65	-	19	-	19	-	47	-	47	-	96	-	96	-

Table 6. BOY and EOY Third-Grade Students’ Performance on the Renaissance 350 Universal Screener in Guided Math Pilot School, 2018–2019																																								
	Ashford ES				Cornelius ES				Henderson NQ ES				Jefferson ES				Neff ES		Neff ES		Reynolds ES				Ross ES				Shearn ES				Sherman ES				Travis ES			
	BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY		BOY		EOY					
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%				
At/Above Benchmark	5	62.5	6	75.0	34	58.6	40	69.0	14	36.8	12	31.6	22	61.1	31	86.1	112	60.2	126	67.7	17	54.8	13	41.9	19	30.2	30	47.6	6	26.1	6	26.1	27	62.8	31	72.1	83	76.9	100	92.6
On Watch	1	12.5	0	0.0	7	12.1	7	12.1	4	10.5	8	21.1	8	22.2	1	2.8	26	14.0	22	11.8	3	9.7	6	19.4	8	12.7	9	14.3	2	8.7	3	13.0	3	7.0	6	14.0	9	8.3	4	3.7
Intervention	0	0.0	0	0.0	8	13.8	7	12.1	6	15.8	9	23.7	2	5.6	2	5.6	23	12.4	20	10.8	10	32.3	8	25.8	17	27.0	12	19.0	6	26.1	6	26.1	7	16.3	3	7.0	14	13.0	2	1.9
Urgent Intervention	2	25.0	2	25.0	9	15.5	4	6.9	14	36.8	9	23.7	4	11.1	2	5.6	25	13.4	18	9.7	1	3.2	4	12.9	19	30.2	12	19.0	9	39.1	8	34.8	6	14.0	3	7.0	2	1.9	2	1.9
Total (n)	8	-	8	-	58	-	58	-	38	-	38	-	36	-	36	-	186	-	186	-	31	-	31	-	63	-	63	-	23	-	23	-	43	-	43	-	108	-	108	-