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RESEARCH IN MATHEMATICS EDUCATION

Project STAIR:
Year 1 Description and Implementation

Technical Report 20-17

Project STAIR:
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Abstract

The purpose of this technical report is to give readers an overview of the 2018-2019 implementation of Project STAIR (Supporting Teaching of Algebra: Individual Readiness). Implementation occurred in four middle schools: a North Texas school, a Central Texas school, an urban Missouri school, and a rural Missouri school. Beginning with three days of core professional development (PD) before the fall 2018 semester, Project STAIR prepared teachers to implement intensive intervention in the mathematics classroom. Teachers took four surveys prior to PD. Teacher research assessments included *Teacher Demographics, Teacher Instructional Practices, Teacher Self-Efficacy Scale, and the Professional Development Satisfaction survey*. During the core PD, teachers were asked to select 2 to 3 students that would benefit from receiving intensive intervention, based on results from the universal screener administered at their school (e.g., STAR Universal Screener) or by receiving special education services and having Individualized Education Program (IEP) goals in mathematics. After receiving consent to participate, project staff met with the selected students and administered two assessments, *Iowa Algebra Aptitude Test* (IAAT) and *Diagnostic Online Math Assessment* (DOMA) *Pre-Algebra.* Then, coaches from the research team worked with teachers in their classrooms by meeting monthly for a preconference, observation, and post-conference. Throughout the year, students were asked to take the *Algebra Readiness Progress Monitoring* (ARPM) assessment once a week so teachers could monitor their students' progress. Following the fall semester of coaching, project staff met with students a second time to administer the same assessments as a posttest measure. At the end of implementation, teachers were asked via email to complete a second round of surveys, including *Teacher Instructional Practices survey, Mathematics Self-Efficacy Scale, and Integrated Knowledge and Motivation Assessment: Multiplicative Reasoning.*

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Introduction

Purpose of Project
Project STAIR (Supporting Teaching of Algebra: Individual Readiness) uses a systematic process that integrates instructional design principles with assessment data to support the algebra readiness of middle-school students at-risk or identified with specific learning disabilities in mathematics. The intent is to understand how to improve mathematics teaching practices of middle-school students with disabilities.

Goals
The long-term goal of this model demonstration is to contribute empirical evidence on the effectiveness of a system of instructional practices for supporting the algebra readiness of middle-school students at-risk for mathematics difficulties or identified with specific learning disabilities in mathematics. Project STAIR aims to develop and iteratively refine a framework for using data-based individualization (DBI) to integrate evidence-based mathematics instructional design principles with algebra-readiness formative assessments within middle-school mathematics classrooms. Across the project, we develop and refine an implementation process that can be replicated within different school systems, and this process focuses on educators' professional learning, fidelity of implementation, and sustainability of effective practices. Finally, we develop and disseminate easily accessible training materials that illustrate the DBI framework in middle-school mathematics, focus on designing mathematics instruction that uses evidence-based practices, and support teachers' meaningful interpretation of and actions from formative assessment data.

Description of Project Components

Within Project STAIR, key components are delivered to teachers through, (1) Core professional development (PD), (2) Tailored PD, and (3) individual coaching sessions.

During 2018-19, Core PD encompassed a 3-day workshop highlighting the Project STAIR framework (DBI), universal screeners, assessments, progress monitoring, and instructional practices. The Tailored PD supported teacher instructional practices through user-friendly Project STAIR videos highlighting evidence-based instructional practices for teachers and students. Individual coaching sessions entailed one-on-one coaching sessions through face-to-face, Skype, phone, email and text, targeting data-based decision making, classroom observations, instructional practices, Tailored PD video modules, and reflective feedback targeting multi-components of the Project STAIR framework.

Core Professional Development

On the first day of Core PD, teachers were introduced to the team, and were provided an overview of the study and its purpose. The Principal Investigators (PI) and Graduate Research Assistants (GRA) at each site presented about the key components of DBI and the assessments to be used in the project. The emphasis was on steps one and two of DBI – evidence-based practices and establishing a present level of performance. Teachers engaged in the content using Poll Everywhere, a tool that allowed participants to respond to questions via their electronic devices and then see those responses displayed for the group in various formats. These polls were also used as formative assessments of teacher learning. Physical materials for the training included sample *Star Math* data graphs, sample *Diagnostic Online Math Assessment* (DOMA) results, and examples of *Algebra Readiness Progress Monitoring* (ARPM) measures. Teachers engaged with these materials to familiarize themselves with the reports and/or items on each assessment.

The second day of Core PD began with a review of DBI using Poll Everywhere. The PI and GRAs at each site presented on DBI describing progress monitoring, collecting diagnostic data, and decision-making based on student responsiveness. Presenters then took the teachers through a case example, inviting the teachers to participate in each step of the DBI process. Materials for this training included a form for interpreting the DOMA diagnostic data and two samples of ARPM data used to practice applying decision rules.

The third day of Core PD began with a review of the prior two days of training including DBI, the assessments to be used in the project, and expectations of their participation. The majority of the training focused on mathematics content and instructional adaptations. Specifically, components of instructional delivery included: explicit instruction, multiple representations, and the use of precise mathematical language, and strategies including fluency building, using problem-solving heuristics, and increasing motivation. Materials for this training included a packet of note-taking forms for teachers to utilize when learning about the practices and strategies as well as examples of interventions that the teachers sorted into examples and non-examples while working in small groups.

Tailored PD

Tailored PD videos included brief 2-10 minute videos on topics such as DBI and using manipulatives to teach specific mathematical concepts. For the 2018-19 implementation, videos were prepared by two PIs: Erica Lembke and Sarah Powell. For future implementation years, the goal is to create videos by teachers and GRAs to include a more diverse pool of presenters to appeal to a general audience. These videos will include topics such as culturally responsive teaching and connecting research to practice as well as creating more mathematics content videos across a wider range of mathematical domains.

By the end of Year 1, we recorded a total of 80 videos. Five videos featured Erica Lembke explaining the foundations and implementation of DBI, and 75 videos featured Sarah Powell

explaining mathematics practices which included providing examples of ways to use manipulatives and teach concepts to students who struggle in mathematics using evidence-based instructional principles.

These initial Tailored PD videos were identified as priority topics for all teachers, and focused on *DBI* and *Best Practice* videos, including: *Explicit Instruction, Mathematical Language, Multiple Representations (Intro to Concrete-Pictorial-Abstract), and Fluency Practice.* Subsequent selection of mathematics video content included known areas of weakness for students with learning disabilities, including word-problem instruction as well as fractions. In addition, many of the videos created included the demonstration of manipulatives to help mathematics teachers understand how to use them in their teaching practice.

After creating videos that targeted specific areas of need for students with mathematics difficulties, subsequent videos were selected to teach strategies or provide teaching strategies that addressed both national Common Core State Standards (CCSS; Common Core Standards Initiative, 2010) as well as Texas Essential Knowledge and Skills (TEKS) state standards (Texas Education Agency, 2012). Many teachers expressed a desire to know exactly how the videos would align with the standards they were expected to teach, so a master list of CCSS and TEKS was compiled and videos were labeled with their corresponding standard. A future goal of the Tailored PD videos is to create at least one video for each of the middle-school CCSS and TEKS.

We used a Lightboard room to record the Tailored PD videos, after each video script went through a vetting process to ensure high-quality content was being produced. A Lightboard is a thin panel of glass, which presenters stand behind. The presenter's PowerPoint presentations are projected on to a green screen behind the presenter, and the presenter can then draw on the Lightboard panel, interacting directly with the material presented in the PowerPoint. The presenter faces two monitors, one projecting the original PowerPoint presentation, and one showing the final product complete with the presentation, presenter, and any writing on the Lightboard layered on top of each other. The final video product is similar to a weather forecast production, with the presenter able to interact directly with the material and visible throughout the video. In addition, in the University of Texas at Austin (UT) Lightboard room, a document camera was available to demonstrate the use of multiple manipulatives simultaneously or zoom in on smaller manipulatives.

The videos were then edited in iMovie to produce succinct, clean final copies of the videos. Finally, edited videos were posted to YouTube under playlist subsections, including:

- Data-Based Individualization
- Word Problem Instruction
- Introduction to Equations
- Integers
- Best Practices for Math Teachers
- Fraction Fundamentals
- Whole Number Computation

When posted to YouTube, videos were labeled with their title, followed by the playlist subsection, followed by the target age of student, according to state and national standards, and

then finally a Project STAIR label. This system of labeling the videos was created after the production and posting of many of the videos. Some early videos are in the process of being relabeled to follow this naming convention. The goal is to create a repository of videos where teachers can search either by content area or by standard to find a corresponding video to meet their needs. The videos can be located at https://www.youtube.com/channel/UCE2puwDtUSNXFONIOhmYmvA/playlists.

Coaching

Purpose

The purpose of coaching was to deliver ongoing support for middle-school educators (i.e., interventionists, general education teachers, special education teachers) participating in Project STAIR. Coaches observed and recorded teacher implementation of the projects' components as outlined during Core PD. Coaching sessions provided teachers individualized support in implementing the DBI process.

The coaching process included face-to-face consultations, classroom observations, and virtual check-ins between coach and teacher on an as-needed basis. Face-to-face consultations allowed coaches to offer additional explanations, provide resources including suggested Tailored PD, and reiterate project goals for student participants. Classroom observations allowed coaches to collect data and confirm teacher use of strategies. Virtual check-ins gave teachers the opportunity to ask clarifying questions and share ongoing experiences with coaches. Coaches maintained regular contact with their assigned teachers.

In order to select 2 to 3 targeted students that would be appropriate for the study, coaches assisted teachers in accessing student testing data and analyzing it. Once identified, coaches and teachers developed a schedule for coaching and observations. The coaching cycle included a pre-observation coaching session, classroom observation, and a post-observation session. Coaches observed teachers during instructional time that included the student participants. Coaching occurred at least twice a month, either virtually or face-to-face.

Coaches at each of the sites had a variety of teaching, coaching, and other professional experiences.

SMU Coach 1. Doctoral student with a Master's degree in mathematics education (Secondary Mathematics). A classroom teacher for six years (9–12 and post-secondary) and a building-level instructional coach for two years, this person coached six teachers as part of Project STAIR.

MU Coach 2. Doctoral student with an education specialist degree in special education (Cross Categorical). A classroom teacher for 15 years (K–12) and a district-wide behavior coach for six years, this person coached four teachers as part of Project STAIR.

MU Coach 3. Doctoral student with a Master's degree in special education (Early Childhood). A classroom teacher for two years (pre-K–5), this person coached two teachers as part of Project STAIR.

MU Coach 4. Professor and the chair of the Special Education department at their institution. This person has a Ph.D. in educational psychology. In addition to being a classroom teacher for six years (K–5) and a university faculty member for 16 years, this person has been a consultant to school-based teams and has developed and implemented coaching models through multiple federally-funded grants. As part of Project STAIR, this person coached two teachers.

MU Coach 5. Doctoral student with a Master's degree in special education (Cross Categorical). A classroom teacher for four years (6–12) and a district-wide behavior coach for two years, this person coached four teachers as part of Project STAIR.

MU Coach 6. Doctoral student with a Master's degree in education (Early Childhood, Elementary, and Special Reading). A classroom teacher for six years (K–8), this person coached three teachers as part of Project STAIR.

UT Coach 7. Doctoral student with a Master's degree in teaching (English Language Arts and Reading). A classroom teacher for four years (K–8) and a building-level instructional coach for two years, this person coached three teachers as part of Project STAIR.

Classroom Observation Form: Creation and Evolution

The coaching cycle began with a pre-observation conference, a classroom observation, and a post-observation conference, typically held the same day or within the next two days.

For Year 1 implementation, two different classroom observation forms were created, one by the research staff at University of Missouri (MU) and the other by those at Southern Methodist University (SMU). The MU team started by screening existing observation forms for content, ease of use, and comprehensiveness. The initial pool of forms was drawn from existing research, researcher-made observation forms, and forms utilized by partner school districts. An initial draft was created, drawing heavily from three primary sources: Classroom Observation: Feedback on Lesson Delivery (Ketterlin-Geller, 2014), Mathematics Instruction Observation Form (Powell, n.d.), and Ratings of Classroom Management and Instructional Support (Doabler, 2009).

The MU team solicited feedback from the SMU and UT project sites. Based on the feedback, two versions of the form emerged—one that used a Likert scale-type rating and one that used open-ended observational recording. In May of 2018, the MU team pilot tested these two different forms at one of their two school sites. The project director and one graduate student utilized the Likert scale-type form and the district's mathematics coordinator and a second graduate student utilized the open-ended observational recording form. After conducting three classroom observations (lasting approximately 30 minutes each), the affordances and limitations of each form were discussed and a second iteration of the MU form was created. The second iteration merged the Likert scale-type form and the open-ended form, adopting the strengths of each. In mid-May of 2018, during an Office of Special Education Programs (OSEP) project directors meeting (OSEP funds Project STAIR), additional suggestions were made for improving the second iteration of the form and after taking all of the feedback into consideration, a final version of the MU form was created (see Appendix A). The final MU observation form included

the following categories: instructional delivery, instructional practices, student engagement, student understanding, productive disposition, and classroom management.

The SMU team created an additional observation form (see Appendix B). The form was open-ended and included an assessment section for references to assessment data, an instruction section that concentrated on evidence of explicit instruction and a multiple representations section aimed at the inclusion of concrete, visual and abstract demonstration.

The MU and SMU forms were used during Year 1 to determine which elements of each form were useful for the coaches and teachers, with the intention of creating a final version that would be consistently implemented during Year 2.

Pre- and post-observation coaching conversation forms
Within the MU and SMU observation forms, there were two additional sections: a Pre-Observation Coaching Conversation form and a Post-Observation Coaching Conversation form. The MU Pre-Observation Coaching Conversation form provided teachers a link to an online survey where they were to provide details about the lesson the coach was planning to observe (e.g., mathematical content, instructional strategy to be implemented). The SMU Pre-Observation Coaching Conversation form asked teachers to assess themselves on four central topics to Project STAIR and complete a brief interview with their coach about the project (e.g., what is going well, what has been challenging). The coach recorded the teacher's responses, as well as the coachs' responses about these topics. The MU and SMU Post-Observation Coaching Conversation form mirrored the SMU Pre-Observation Coaching Conversation form, which included a teacher self-assessment and a brief interview.

Post-observation conferences were held either via phone or e-mail, virtually (e.g. Google Hangouts, Skype, Zoom), or in person. The least commonly used mode of communication for post-observation conferences was e-mail. E-mail conferences were only used sparingly and only as a last resort when all other options were not possible and, in the interest of time, e-mail functioned as a method of contact contiguous with the in-class observations. Variation in implementation across sites was documented.

Research Assessments for Teachers

Data were gathered from teachers and students before, during, and following implementation of Project STAIR to analyze the effectiveness of Project STAIR in improving teacher and student outcomes. Teachers were administered surveys through the online platform Qualtrics, designed to assess teacher knowledge, practices, and beliefs. Student assessments were administered both online and in person, and were intended to measure students' progress towards algebra readiness. Below is a list of the teacher and student measures used throughout Project STAIR.

Teacher Assessments

Day 1 of Core PD began with three surveys covering demographics gauge teachers' beliefs, and teachers' practices prior to implementation of Project STAIR. The three initial assessments include *Teacher Demographics, Teacher Instructional Practices, and Teacher Self-Efficacy*

Scale. Teachers were given a Professional Development Satisfaction survey following the first two days of Core PD and again following the third day of Core PD. At the conclusion of implementation, teachers were given the *Teacher Instructional Practices* and *Teacher Self-Efficacy Scale* survey a second time. An additional survey was also given at the end of implementation called *Integrated Knowledge and Motivation Assessment: Multiplicative Reasoning* (Jacobson & Izsak, 2010). All teacher surveys were administered online through a course in Canvas, a learning management system (LMS), using the survey platform Qualtrics.

Teacher Assessments:

1. *Teacher Demographics* (Appendix C)
2. *Teacher Instructional Practices* (Appendix D)
3. *Teacher Self-Efficacy Scale* (Appendix E)
4. *Professional Development Satisfaction* (Appendix F)
5. *Integrated Knowledge and Motivation Assessment: Multiplicative Reasoning*

Teacher Demographics

Demographic information was collected from all teachers. The demographic information collected included first name, last name, and home address, as well as highest level of education, degree, and current job title. Next, teachers were asked how many years of experience they had in the following areas: current position, teaching, teaching grades 6-8, teaching at their current school, mathematics classroom teaching experience, and special education mathematics experience. Teachers were then asked to select their credentials related to teaching from a list. Finally, teachers provided their gender, race/ethnicity, age range, areas of PD completed in the past year, including hours in each area, and current service-delivery model.

Teachers received between 16-19 items on this survey. Teachers received more questions if they selected that they attended any of the listed areas of PD because the survey then prompted them to answer a question about how many hours of PD they had in each of the areas. This survey took teachers an average of 6.5 minutes to complete.

Teacher Instructional Practices

The *Teacher Instructional Practices* survey began with four multiple-choice questions eliciting teachers' knowledge about data-based individualization. Next, four matrix style questions evaluated different practices teachers may use in the classroom, including one block for data-based individualization, two blocks for instructional practices, and a final block for assessment practices. In each of these matrices, teachers were given descriptions of practices they may or may not engage in. Teachers were asked to rank the frequency of which they use the practice, understanding of the practice, perceived importance of the practice, and confidence implementing the practice. There were 27 items total listing the strategies in the four matrices. Last, three questions related to climate and culture in the school were presented on a four-point Likert scale ranging from strongly disagree to strongly agree.

This measure was used to understand teachers' use of evidence based instruction and assessment practices before and after implementation. The survey was given to teachers once prior to

implementation of Project STAIR, and a second time at the end of implementation. This took teachers on average 19 minutes to complete.

Teacher Self-Efficacy Scale

The *Teacher Self-Efficacy Scale* included a total of seven items on a Likert scale, and was adapted from Powell et al. (2019) and featured questions similar to those studied in the classic Gibson and Dembo (1984) self-efficacy paper, along with Boyd et al. (2014) and Giles et al. (2016). The questions covered confidence teaching mathematics, understanding of mathematical concepts, and knowledge and comfort around teaching and explaining mathematical concepts in the classroom.

This survey was also given to teachers once prior to implementation of Project STAIR and a second time at the end of implementation. The purpose of the Teacher Self-Efficacy Scale was to get an understanding of teachers' self-efficacy in their ability to teach mathematics before and after implementation of Project STAIR. This survey took teachers an average of 1 minute to complete. The instrument is included in Appendix C.

Integrated Knowledge and Motivation Assessment: Multiplicative Reasoning

The *Integrated Knowledge and Motivation Assessment: Multiplicative Reasoning* (Jacobson & Izsak, 2010) included eight pairs of questions, 16 questions total. The first question in each pair presented a classroom scenario, and the second question was a Likert scale asking about teachers' perceived knowledge and ability to handle the scenario. The first question in each pair asked the respondent about how a student might work through the problem discussed in the scenario. Four questions asked them to choose the option that best characterizes a student's technique for finding the answer. The other four questions presented several ways a student might work through the problem, and asked which of the methods displayed or described will work and which methods will not. The Likert scale questions were consistent throughout the survey and include: Knowing how to answer questions like this is one of the most important things you need to know to be a good mathematics teacher, I am good at answering questions like this one, I often feel nervous when I try to answer questions like this one, and If I try hard, I can usually figure out questions like this one.

This survey was administered once at the end of implementation. This survey took teachers on average 40 minutes to complete.

Professional Development Satisfaction

The *Professional Development Satisfaction* survey had a total of 14 items, which included five Likert-type questions about the value and content of PD, three questions about development of teachers' understanding of DBI, evidence-based instructional practices in mathematics, and formative assessments, and three questions about the impact of coaching on data-based individualization, evidence-based instructional practices in mathematics, and formative assessments. The survey concluded with two open-ended responses asking what teachers found

useful and what needs improvement, followed by a final open-ended response for teachers to share anything else not covered in the previous questions about Core PD.

This measure was given to teachers following each Core PD session. Because Core PD days were spread out over a few weeks, we chose to measure satisfaction after each session. This survey took teachers about 3 minutes to complete.

Assessments for Students

All student participants were administered a universal screener as part of their typical school activities. Project STAIR researchers administered two additional pre- and post-assessments before and after the intervention period. Students also took a weekly progress monitoring assessment administered a minimum of seven times during the intervention period. The pre- and post-assessments included the DOMA: Pre-Algebra and the IAAT. These assessments were administered on different days, so no students had to take both assessments on the same day. It likely would have been overwhelming for students to take both assessments on the same day. At each school site, students were split into two similar-sized groups for testing. One group took the IAAT first while the other group took the DOMA, then the two groups switched assessments on the second day of testing. This method was used to ensure the order in which students took the assessments did not affect the outcomes. Following initial assessments, students were given the ARPM a minimum of seven times throughout intervention. Teachers were instructed to use a graphing spreadsheet provided by the research team to visualize student progress.

Renaissance Star Math

Star Math is published by Renaissance Learning (2018), and serves as a universal screener. All schools except School B already used this assessment as part of their normal practices. As a universal screener, the purpose of *Star Math* is to determine whether or not students are reaching certain benchmarks in mathematics and if they would benefit from intervention (Renaissance Learning, Inc., 2018). A linking analysis by Renaissance reported that *Star Math* is an accurate predictor of how students will perform on the *State of Texas Assessments of Academic Readiness* (Renaissance Learning, Inc., 2017). This allows educators to distinguish early on if students are likely to fall behind in mathematics and utilize an intervention with those students early on. The relation to performance on the *Star* suggests that *Star Math* was a suitable assessment to determine which students would benefit most from intervention.

For all schools except School B, teachers were instructed by Project STAIR researchers to use the results along with the additional selection criteria to identify 3-5 student participants for Project STAIR. School B did not administer a universal screener. Instead, they only used the additional selection criteria. In addition to *Star Math* scores, teachers selected students who meet the following criteria: 1) have a learning disability and 2) have IEP goals.

Diagnostic Online Math Assessment (DOMA) Pre-Algebra

The *Diagnostic Online Math Assessment* (DOMA) Pre-Algebra is an assessment of students' Algebra I readiness (Let's Go Learn, Inc., 2019). This assessment requires a desktop or laptop computer, scratch paper, and headphones. The assessment is administered through Let's Go Learn, Inc.'s website. The questions are read aloud to students during the assessment. The assessment uses adaptive technology to evaluate the areas of mathematics considered essential for students entering Algebra I (Seton Testing). Additionally, adaptive technology allows *DOMA* to measure a varity of student abilities (Let's Go Learn, Inc., 2019). The 14 areas of mathematics knowledge measured by the *DOMA Pre-Algebra* include: integer operations, fraction operations, decimal operation, comparing and converting, estimating and rounding, evaluating exponents, ratios and proportions, simplifying expressions, coordinate graphing, linear functions, simple equations, geometry, interpreting data, and simple probability.

This assessment was used as a pre- and post-test to assess the difference in students' algebra readiness before and after receiving intensive intervention from their teachers. Scores were reported online in the data portal of Let's Go Learn Inc.'s website. This assessment was given to students once at the beginning of the implementation of Project STAIR, and again following the intervention.

Algebra Readiness Progress Monitoring (ARPM)

Algebra Readiness Progress Monitoring (ARPM) is a weekly measure designed for students in grades 6-8. ARPM is published by Istation, Inc and is intended to determine how students progressed towards algebra readiness. ARPM focusses on three separately assessed areas including proportional reasoning, quantity discrimination, and number properties. The three constructs are tested separately in timed sections. Students have three minutes to complete each section of the assessment. Students are instructed to answer as many questions as they can in each section before the time runs out.

Participating teachers were provided with a spreadsheet called the Student Tracking Spreadsheet to input student data for the ARPM. The spreadsheet was designed for teachers to get initial baseline ARPM scores for their students, track these scores after each intervention strategy, and display trend lines through the testing process. On the "Data Entry" tab, teachers input up to three student names and ID numbers.

Teachers were instructed to give the ARPM to their students across three separate weeks prior to any intervention to collect baseline data. Teachers input the dates and recorded students' scores for the Quantitative Discrimination, Number Properties, and Proportional Reasoning sub-test. Once the first test was given and recorded on the "Data Entry" sheet, the teacher set goals for their students and viewed graphs for each sub-test. Teachers had the option of a moderate 1:1 score increase goal for their students, subject to the remaining weeks in the semester. Other options included a more aggressive goal for their students (e.g. 1.5:1) or a more conservative increase (e.g. 0.5:1) and anywhere in between that the teachers saw fit. Teachers then put the estimated score increase value in the "Goal" boxes above all three graphs. This produced a "Goal Line" on the graph. For example, if a student scored a 10 for QD, the teacher may have

established a moderate goal of 1 numerical score increase across the next 10 weeks of school, setting the goal at 20 and placing this number in the box.

Once teachers collected the benchmark data for three weeks on the "Data Entry" sheet, they began to use interventions with their students and record their scores on the "Interventions" tab. Here, the date and scores continued to be recorded as was done on the "Data Entry" tab. Scores placed on this sheet correspond to marks on the trend lines created on the "Student ##" tab. After each intervention utilized by the teacher, they recorded their scores under the next section in "Interventions." Three sections allowed teachers to attempt three interventions with their students. After recognizing no change in student scores as illustrated on the "Student ##" tab graphs, teachers were to introduce a new intervention and begin recording test scores after the intervention in the "Intervention 2" sections of the "Intervention" sheet. This cycle was to repeat once it was recognized there was no change in performance on test scores. Teachers would then move on to recording data under "Intervention 3," after the introduction of yet another intervention.

Multicolored graphs showing linear markings at the start of each new intervention were displayed without any additional input from teachers on the student sheets. Each student had three graphs that represented Quantitative Discrimination, Number Properties, and Proportional Reasoning scores. Each graph displayed the connection between scores during the benchmark and intervention stages. Additionally, each graph displayed a goal line. Teachers and stakeholders were able to view the graphs and discern student performance across each of these stages.

This assessment took the least amount of time of the student assessments to complete; additionally, it was given the most frequently and was administered at least seven times to each student throughout the semester. ARPM was administered each week during implementation of Project STAIR to track students' algebra readiness throughout the semester. The graphing spreadsheet allowed teachers to see student progress each week and adjust intervention as necessary.

Iowa Algebra Aptitude Test (IAAT)

Iowa Algebra Aptitude Test (IAAT) (University of Iowa, 2006) is a timed, written assessment administered in four separate and timed sections. IAAT is designed to determine students' Algebra I readiness. The assessment uses the National Council of Teachers of Mathematics' standards and is a sound measure of algebra readiness (Schoen & Ashley, 2020). The four sections of the assessments include: pre-algebraic number skills and concepts, interpreting mathematical information, representing relationships, and using symbols (Schoen & Ashley, 2020). Each of the four sections contains 15 questions, and students are given 10 minutes to answer the questions in each section. The test administrator follows a script and times students (Schoen & Ashley, 2020).

For Project STAIR, the IAAT was given to students in two forms, form A and form B. All students were given form A as the pre-test, and form B as the post-test. The assessments were scored by hand, rather than through the HMH Scoring Service, using the answer key and a

spreadsheet designed by the researchers to calculate scores. IAAT was also intended to assess students' progress towards algebra readiness before and after intensive intervention.

Year 1 Implementation

Participating Schools

Year 1 of Project STAIR was implemented in four middle schools, two located in Texas and two in Missouri. The schools varied in student population and demographics. The schools are listed below:

1. School A (North Texas)
2. School B (Central Texas)
3. School C (Urban Missouri)
4. School D (Rural Missouri)

School A and School B, both located in Texas, were considered suburban schools, School C was classified as urban, and School D as rural. School C and School D are located in Missouri. The number of students and teachers who participated in Project STAIR varied at each school as well. The grade level at each school ranges from Grades 6-8, and all three grades were included in implementation. The data for participating schools varied across states because Texas and Missouri maintain different state achievement standards and different state assessments. Participating teachers had varied backgrounds in education and experience as well. All teachers at School B taught in special education classrooms, while the teachers at the other three schools taught in general education mathematics classrooms.

Table 1 shows the school in the four participating schools.

Table 1. School Demographics

Characteristic	School A	School B	School C	School D
Total student population	575	1,688	766	723
Geographic classification	urban	suburban	suburban	rural
Race/ethnicity				
African American	25.2%	4.7%	77.4%	15.2%
American Indian	0.7%	0.6%	0.0%	0.0%
Asian	5.9%	17.6%	0.0%	8.2%
Caucasian	14.6%	55.0%	13.1%	62.0%
Hispanic/Latinx	50.8%	19.1%	0.0%	7.3%

Pacific Islander	0.2%	0.1%	0.0%	0.0%
Two or more races	2.6%	3.0%	6.0%	6.8%
Economically disadvantaged	72.2%	8.7%	NR	NR
English language learner	17.4%	3.7%	NR	NR
Special education	13.6%	8.0%	NR	NR

Note. NR = not reported.

School A (North-TX)
School A, located in Grand Prairie, Texas had 575 students in the 2016-2017 school year. School A had students in grade 6 through grade 8. Based on student demographic information, School A was the most racially diverse school in Project STAIR. The majority of students identified as Hispanic (50.8%) followed by Black (25.2) and then White (14.6%). 72.2% of students at School A are identified as economically disadvantaged, 17.4% are English Language Learners (ELL) and 13.6% are special education.

The school performance information for Texas Schools A and B are based on the Texas Education Agency's (TEA) annual school report card. These report cards merge data from the Texas Academic Performance Reports and financial reports to provide a general overview of school performance. These report cards are available for every school in the state of Texas and is intended to provide parents and guardians with transparency of a schools overall characteristics as well as its academic performance (TEA, 2019). The schools were measured in four indices, including Index 1: Student Achievement, Index 2: Student Progress, Index 3: Closing Performance Gaps, and Index 4: Postecondary Readiness. The TEA Performance Reporting Framework (2017) describes Student Achievement measures satisfactory student performance on universal screeners with credit given for the number of students meeting the "Approaching Grade Level" standard. Student Progress measures student progress based on ethnic group across Reading and Mathematics scores on universal screeners. Closing Performance Gaps measures satisfactory performance for economically disadvantage students and the two lowest-performing racial/ethnic groups with points given for each percentage point of tests from this group meeting "Approaches Grade Level" and "Masters Grade Level" standards. The Postsecondary Readiness index measures college readiness by allotting points for certain racial/ethnic groups meeting "Meets Grade Level" standard on two or more subject-area tests, high school graduation rates, percentage of students on the Recommended High School Plan, and the percentage of post-secondary credit given in career and technical education courses. These scores are considered acccountabilty ratings for all schools in the state of Texas (TEA, 2017b).

The 2017 performance indices for School A and School B show state accountability ratings across four areas including Student Achievement, Student Progress, Closing Performance Gaps, and Postsecondary Success, presented below in Table 2. For each of the four indices (Student Achievement, Student Progress, Closing Performance Gaps, and Postsecondary Readiness), points were awarded based upon the percentages of tests meeting and exceeding certain standards. The STAAR test was used as the indicator and a point was given for each percentage point for each criteria. The points for an index were totaled and divided by the total possible points (300). The "scores" are the percentages out of total possible points for that index. A TEA

committee set targets for each standard. Index 1 (Student Achievement) had a target score of 60 points (Student Achievement), Index 2 (Student Progress) had a target score of 30, Index 3 (Closing Performance Gaps) had a target score of 26 and Index 4 (Postsecondary Readiness) had a target score of 13 (TEA, 2017c).

School A exceeded the target on each of the four indices. School A's scores for 2017 were 69 for student achievement, 37 for student progress, 37 for closing performance gaps, and 39 for postsecondary readiness.

In 2017, School A's School Report Card showed that the school met state accountability standards across all indices. Attendance rate for the campus in the 2016-2017 school year was 96.3%, slightly higher than the district attendance rate of 95.1% and the state attendance rate of 95.8%. The mobility rate for 2015-2016 school year was 11.9%, while mobility for the district was 15.9% and mobility for the state was 16.2%. The average size of a mathematics classroom for 7th and 8th grade was 16.6 students, compared to 18.8 students at the district level, and 18.0 at the state level. The grade 6 students' class size was not measured by subject because the state of Texas considers 6th grade elementary, which was measured by whole class size. 6th grade classes as a whole had 15.3 students on average at School A, compared to 15.3 at the district level and 20.4 at the state level. (TEA, 2017a)

School B (Central-TX)
School B was located in Round Rock, Texas. In 2017, there were 1,688 students total attending School B. The majority of students at School B identify as white (55.0%), followed by Hispanic students (19.1%) and Asian students (17.6%). 8.7% of students are identified as economically disadvantaged, 3.7% are English Language Learners (ELL) and 8% are special education. This information is depicted on Table 1 as well.

School B's scores for 2017 were 96 for student achievement, 53 for student progress, 60 for closing performance gaps, and 78 for postsecondary readiness. These scores are depicted below in Table 2.

In 2017, School B's School Report Card showed that the school met state accountability standards. School B also received multiple distinction designations, which recognize areas of achievement in schools. These distinctions include ELA/reading, science, mathematics, social studies, top 25% student progress, and postsecondary readiness. The attendance rate for 2015-2016 school year was 97.2%, which was slightly higher than the attendance for the district which was 96.4% and the state attendance rate which was 95.8%. The mobility rate for the 2015-2016 school year was 4.3%, which was much lower than the mobility rate for the district of 13.3% and the state rate of 16.2%. The average mathematics classroom size for 7th and 8th grade was 21.5 students, compared to 16.7 students at the district level, and 18 at the state level. The average 6th grade class was 18 students, compared to 19.1 at the district level and 20.4 at the state level.

Table 2 shows the Texas schools' performance index scores compared to the state target score. Both School A and School B scored above the target score in all four indices. School B scored much higher in each area than School A. Specifically, post-secondary readiness, where School B scored 39 points higher than School A.

Table 2: Texas Student Performance Data

Description	Target Score	School A	School B
Student Achievement	60	69	96
Student Progress	30	37	53
Closing Performance Gaps	26	37	60
Post-secondary Readiness	13	39	78

School C (Urban-MO)
School C was located in the greater St. Louis area and had a total enrollment of 766 in 2018. School C had grade 7 and grade 8 students, and was made up of majority Black students (77.4%), followed by White students (13.1%) and then students who identified two or more races (6.8%). School C reported 0.0% for Hispanic, Asian American Indian, and Pacific Islander students.

The scores on the tables below are based on Missouri School Improvement Programs (MSIP5) standards (Missouri Department of Elementary & Secondary Education, 2019). The standards are intended to show how each district meets performance standards. Academic Achievement shows the percentage of students scoring proficient or advanced based on each of MSIP5 standard. Subgroup achievement shows proficient and advanced performance for students in a subgroup that includes the following student groups: Hispanic, Black, free/reduced lunch, (FRL), individualized education program (IEP), and English Language Learners. As shown in Table 3, in 2017, School C had 62.5% of students performing at proficient or advanced academic achievement and 41.7% of subgroup students were performing at or above proficiency.

School D (Rural-MO)
School D was located in a mid-Missouri town and had a total enrollment of 723 in the 2018 school year, and consists of grade 6 through grade 8 students. The majority of students identified as white (62%) followed by Black (15.2%) and Hispanic (7.3%). In 2017, School D had 85.4% students performing at proficient or advanced academic achievement and 50% of subgroup students were performing at or above proficiency.

The table below shows the standards schools in Missouri are expected to reach or exceed, indicated by MSIP5. The standards include academic achievement, subgroup achievement, college and career readiness, and attendance. College and career readiness was not measured for these schools because this measure does not apply to middle schools. The first column incidates the total points possible in each area and are listed for reference.

Table 3: Missouri Student Performance Data

Description	Points Possible	School C	School D
Academic Achievement	48	30 (62.5%)	41 (85.4%)
Subgroup Achievement	12	5 (41.7%)	6 (50%)
Attendance	10	6 (60.0%)	7.5 (75%)
Total	70	41 (58.6%)	54.5 (77.9%)

Participating Teachers

In cohort 1 of Project STAIR, there were 16 female participants (72.7%) participants and six male participants (27.3%) for a total of 22 teachers (see Table 4). The majority of participants identified as white (*n*=14, 63.6%) followed by Hispanic/Latino America & White (*n*=4 18.2%). Asian American/Pacific Islander (*n*=1, 4.5%), Black (*n*=1, 4.5%), and two respondents did not answer this question. Eight respondents' age ranged from 40-49 (36.4%), followed by six respondents from 30-39 (27.3%), four from 20-29 (18.2%), two from 50-59 (9.1%), and two did not respond.

Table 4

Characteristic	*n*	%
Gender		
Female	16	72.7%
Male	6	27.3%
Race/ethnicity		
African American	1	4.5%
Asian American	1	4.5%
Caucasian	14	63.6%
Hispanic/Latinx	4	18.2%
NR	2	9.1%
Age		
20-29	4	18.2%
30-39	6	27.3%
40-49	8	36.4%
50-59	2	9.1%
NR	2	9.1%
Total	22	100%

Table 5 shows that 18 respondents reported their current title as classroom teachers (81.8%), three special education teachers (13.6%), and one interventionist (4.5%).

Table 5

Teacher description	*n*	%
General education teacher	18	81.8%
Interventionist	1	4.5%
Special education teacher	3	13.6%
Total	22	100%

As shown in Table 6, all except for one non-response indicated that teachers had earned a Bachelors' degree (*n* = 21, 95%) in middle-school mathematics education (*n*=3, 15%), middle school math and science education (*n* = 1, 2%), interdisciplinary studies with focus on mathematics or science (*n* = 3, 14%), Education (1, 5%), mathematic or science (2, 9%), an area

outside of education (*n* = 6, 30%), unspecified area (4, 18%), and no response (*n* = 2, 9%). There were 16 respondents who stated they had a Master's degree or are in the process of a degree. Of all respondents, 13 (73%) had Masters degrees related to education (e.g., secondary education/administration, teaching and administration, curriculum and instruction, educational leadership and policy analysis, counseling), and 2 respondents (9%) were pursuing master's degrees in areas outside education (e.g., accounting & finance). The majority of participants did not pursue any education after a master's degree. Only 3 respondents (14%) reported that they hold a degree beyond the master's level.

Eleven (50%) respondents reported their highest level of education was a Master's degree. Eight (36%) teachers reported that the highest degree they held was a Bachelor's degree, and three (14%) teachers reported that they held degrees beyond their Master's degree.

Table 6

Highest educational degree	*n*	Frequency
Bachelor's	7	31.8%
Master's	12	50%
Beyond Master's	3	14%
Total	22	100%

Table 7 indicates the credentials held by teacher participants in this study. Eight respondents (36.4%) reported that they had a general multiple subject credential, which includes Grades K-6, K-8, K-12, and 4-8, as well as the subjects mathematics, science, and art. Four participants (18.2%) have single subject credential. Only one respondent had a special education credential, and one participant had a mathematics specialist credentials. One respondent had both single subject and special education credentials. Five participants (25%) reported that they had more than two credentials. Four respondents (18.2%) had a general multiple subject along with a single subject credential, and one respondent reported that they had three credentials.

Table 7

Credentials	Frequency (*N*)	Percentage (%)
General multiple subject	8	36.4
Single subject (e.g., math, science, etc.)	4	18.2
Special education and general subject	1	4.5
Mathematics specialist	1	4.5
Single subject & Special education	1	4.5
General multiple subject & Single subject	4	18.2
General multiple subject /Single subject / Special education	1	4.5
No response	2	9.1
Total	22	100.00

Table 8 shows that participants' teaching experience varied. On average, respondents had 10.94 years of teaching experience, with a standard deviation of 6.3 years. On average, respondents had

7.47 years of experience in the current position with a standard deviation of 6.37 years. Additionally, respondents on average had 10.26 years of experience teaching middle school and 9.37 years teaching in a mathematic classroom. The respondents with experience teaching special education mathematics had a mean of 6.71 years of experience with a standard deviation of 3.3.

Table 8

Area	*M*	*SD*
In current position	7.47	6.37
Of teaching experience	10.94	6.30
Teaching middle school	10.26	6.29
Teaching mathematics	9.37	6.31
Teaching special education mathematics	6.71	3.30

Seven respondents (35%) had 1-5 years of experience in their current positions, followed by six respondents (30%) with 6-10 years in their current position. Four respondents (20%) had 1-5 years of experience teaching middle school students, seven respondents (35%) had 6-10 years of experience, and seven respondents had 16-20 years of experience. Six respondents stated they have 1-5 years of experience teaching mathematics, six (30%) stated they had 6-10 years, and six (30%) stated they had 16-20 years of experience. Six out of 20 respondents had special education mathematics teaching experience, two of whom had 1-5 years of experience, three had 6-10 years of experience, and one had 11-15 year of experience.

Participants were asked if they had received any professional development (PD) within the last year in the areas of curriculum-based measurement (CBM), mathematics assessment, and data-based decision making. As shown in Table 9, 12 respondents (54.5%) reported that they had attended PD in mathematics assessment. Twelve respondents (54.5%) also stated that they attended PD in data-based decision making. Only 5 respondents (22.7%) attended PD in curriculum-based measurement.

Table 9 Professional Development Taken Outside of Project STAIR

PD Area	Received PD
Curriculum-based Measurement	5 (22.7%)
Mathematics Assessment	12 (54.5%
Data-Based Decision Making	12 (54.5%)

Table 10 shows, of the participants who participated in PD, the majority received from 1-5 hours in the areas stated. Twelve participants had PD experience in mathematics assessments, and twelve had PD in data-based decision making. Only five respondents had PD in curriculum-based measurement (CBM). The table below shows the amount of time teachers spent in each area of PD.

Table 10

Time in Hours	Curriculum-based measurement (CBM)	Mathematics assessment	Data-based decision making
>1	0	1	0
1-5	1	7	7
6-10	0	2	1
11-15	0	0	0
16-20	1	0	0
20 or more	3	2	4
Total	5	12	12

Fourteen participants (63.6%) reported that they were using the general education model where students with IEPs receive none of intensive mathematics from them. Two participants reported that they used a resource room model (9.1%). Three participants (13.6%) stated that they implemented a self-contained model, two used a co-teaching model (9.1%), and two did not indicate a service delivery model (4.5%).

Table 11

Service delivery model	Frequency (*n*)
Co-teaching	2 (9.1%)
General education	13 (59.1%)
Resource room special education	3 (13.6%)
Self-contained special education	2 (9.1%)
Teacher did not indicate a service delivery model	2 (9.1%)
Total	22 (100%)

Project Implementation by Site

University of Missouri

In Year 1, the MU team worked with general education mathematics teachers at two sites, School C and School D. The team provided day one and two training on consecutive days at each respective site before the start of school. Teachers were given pre-test measures at the start of day one training. Coaches were assigned and contact established in the initial training. Student consent forms were gathered at these trainings. The third training took place at School C shortly after the start of school, and at School D one month later.

After assent, students were pre-tested over two days, taking the IAAT in one session and the DOMA in another. The order of assessments was randomized to mitigate order effects. These data was double entered by coaches, and discrepancies resolved by a third coach.

Following day three training, the MU team began a cycle in which teachers, with coach support, collected and graphed progress-monitoring data, implemented an instructional strategy and made data-based decisions. Coaches met with teachers every other week, alternating in-person visits

and virtual visits, between November and February. Students were assessed weekly on the ARPM. At School C, ARPM measures were administered by teacher participants in this study. At School D, ARPM measures were administered by a school-based instructional coach who was not a participant in this study. These graphed data were reviewed for decision making in coaching meetings. The number of data-points at which decision making occurred varied by teacher due to difficulties administering the ARPM measures.

Post-testing occurred in two sessions between January and February at both sites. The data were double entered by coaches and discrepancies resolved by a third coach. Teachers were administered post-test measures and each school-based group participated in a focus group with the MU team in March.

Southern Methodist University

The SMU team worked with general education teachers and one interventionalist, all teaching at the same site, School A. The team conducted Professional Development training days one and two consecutively during the first month of school. Teachers received and completed pre-test measures prior to the start of day one training. One coach was designated for all of the educators on the site and introductions were made. The SMU team worked with the educators to determine possible student candidates for participation in the study. Student consent forms were handed out for the teachers to deliver to possible student participants. Training day three was conducted a month after the initial professional training dates.

Students who were selected and consented to participation in the study were pre-tested over two days taking the IAAT in one session and the DOMA in the other. Students were randomly assigned to a testing group on day one. Group A took the IAAT on day one of testing and Group B took the DOMA. The groups switched tests on the next day. The data was double entered by SMU staff and discrepancies were resolved by the coach.

Due to teacher schedules, the teachers decided to only conduct weekly ARPM testing and address DBI during their 6th period PLC block. During this block, teachers had all of their students pulled out of their classes and report to the math department lead's classroom to complete the ARPM testing. All testing was scheduled to be completed by the end of the semester in December 2018.

In order to make sure teachers had an adequate number of observations, a schedule was devised where teachers were observed every other week. There were no pre-observation conferences with the teachers after they expressed that there was no time to have these conferences. Each teacher was observed, and a post-observation conference followed the next day, in person during their planning period or the same day during the first half of the teacher's PLC. The coach contacted the teachers via e-mail a week before the expected observation date. Most teachers did not acknowledge the receipt of the e-mails. The coach copied the principal and assistant principal in all of the coaching and observation reminder e-mails.

Teachers were observed during an entire class period, 57 minutes on average. Following these observations, teachers were coached once every other week over a period of six weeks. Each of the teachers were coached three times during the post-observation conferences. With six

teachers, this was about 18 coaching sessions in all. The coaching cycle of observation, post-conference was fully implemented three times. The coach used the STAIR Coaching Protocol SMU document to record the observations and post-observation conferences. These forms were used the entire length of the project from September through December.

The focus of each coaching session was on the DBI process, reviewing the trends in student progress on ARPM tests and elements of explicit instruction that was and was not seen during the observation. The coach offered resources that could be used in the classroom and referred to the PD slides on examples of explicit instruction to consider using in their class.

University of Texas

The UT team delivered the PD with their participating teachers completing days one, two and a part of day three, all in one day. The team presented the rest of the day three PD on an individual basis with each teacher.

The UT team tested students during the school year at the teachers' convenience. Each class of teachers' participating students were tested separately. This process took two weeks to complete due to scheduling conflicts and technology issues on the campus.

The coach visited each teacher once in the fall for a coaching session to discuss data and how they could implement the use of the videos. The first coaching session did not include an observation. The following coaching sessions included a brief per-observation survey, followed by the observation and post-observation conference on the same day. All coaching sessions were done in person.

Each teacher was coached twice, one time without being observed, and one time after being observed. The teachers were given a window within which the coach could observe them, and the observation was set up according to their availability within that window. Teachers were asked to complete a pre-conference survey a week prior to the observation. Observations were 45-50 minutes (one class had an additional five minutes blocked into the period because of school announcements scheduled during that period). All conferences were held in person. The entire coaching cycle was only implemented once per teacher. The coach alternated using the SMU and MU observations/coaching forms for the teachers. Teachers were coached based on the area they requested feedback for.

Conclusions

The purpose of Project STAIR is to support middle school students struggling with algebra readiness by providing ongoing support to teachers throughout the school year. By providing core professional development at the beginning of the school year, tailored professional development videos, and coaching, Project STAIR gives teachers resources to provide intensive intervention to their students. A number of project assessments, research assessments, and surveys helped the research team understand the areas of Project STAIR that worked as well as the areas that needed improvement. Additionally, the variety of schools and demographics within the schools showed researchers how Project STAIR may vary across sites. The pilot year of Project STAIR gave researchers insight to improve the implementation in future years.

Core Professional Development for teachers was conducted by the PIs and GRAs across three days. Professional development included three days of introducing participants to the purpose and directions for administration for DBI, Assessment and Instruction in Project STAIR. Professional development included teachers engaging with Poll Everywhere, participation in collecting data and selecting students, and learning mathematics content and instruction practices.

Tailored PD videos 2-10 minutes in length were developed by PI's Erica Lembke and Sarah Powell. There were a total of 80 videos at the end of Year 1. Videos focused on DBI and best practices. The lightboard room located on the UT campus was used to record the Tailored PD videos. Videos were then posted on YouTube and the Project STAIR website.

Year 1 Implementation of Project STAIR had seven coaches with backgrounds in education and mathematics. Coaches were assigned to participating teachers. Classroom observations were performed by the coaches with a post-observation conference occurring within two days of the observations. Coaches used two different observation forms with SMU used an open-ended observation form, while the MU team used a different form incorporating both a Likert-scale section with open-ended questions. Both teams used pre and post-observation forms. Coaches held post-observation conferences in person and virtually with their teachers.

In all, 22 teachers from four schools participated in the project. The schools were located in North Texas, Central Texas, Urban Missouri, and Rural Missouri. Each teacher selected two to three students to participate in the project. Each teacher completed both pre and post project assessments regarding demographics, instructional practices, self-efficacy, and multiplicative reasoning. Teachers also completed a survey regarding PD satisfaction.

Participating students completed several assessments with the coaches assigned to their schools. These assessments include *Star M*ath, DOMA, and IAAT. Students completed the ARPM assessments weekly as administered by their teachers. Teachers plotted scores in the Graphing Spreadsheet provided by Project STAIR where student progress and trendlines were graphed. These graphs were used during coaching conferences for decision-making regarding the level of intervention intensification. Coaches trained and assisted teachers on proper decision-making practices based upon student performance trajectory.

At the conclusion of Project STAIR, teachers completed the post-project assessments. Students also completed post-project assessments which was all collected for data analysis.

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Appendix A – MU Observation Form

Pre-Observation

1. Coach should send teacher this link (https://docs.google.com/forms/d/e/1FAIpQLSeymZcfi_hhE9MTBW0RsWwlE8ddr32iBer-BbY6HV95pT2SQQ/viewform?usp=sf_link) at least five school days prior to the observation.
2. Teacher should complete this survey at least two days prior to the observation.
3. Coach should check the teacher's responses prior to the observation.

Observation Form

Adapted from: Sarah Powell (srpowell@austin.utexas.edu); Ratings of Classroom Management and Instructional Supports Scoring Rubric (Doebler et al.); and CPS Classroom Universals Inventory

SCHOOL:	TEACHER:	
DATE:	OBSERVER:	
TIME:	TOPIC:	NUMBER OF STUDENTS:

DIRECTIONS: Complete this form based on what you observed and what you would expect to see represented within a typical class period. Place an "X" into the column that indicates to what degree the component was observed. Make notes as needed.

KEY: Use the following key to record to what degree of consistency the teacher engages in the indicated behavior or instructional practice:
1 = 0 – 25%
2 = 26% – 50%
3 = 51% – 75%
4 = 76% – 100%
n/a = not relevant to observed instruction

INSTRUCTIONAL DELIVERY	1	2	3	4	n/a	NOTES
Demonstrations are clear and concise.	☐	☐	☐	☐	☐	
Teacher explanations are in-depth, but not excessive.	☐	☐	☐	☐	☐	
Pacing of instruction is high, but accessible.	☐	☐	☐	☐	☐	
Provides academic pre-corrects. *(anticipates student misconceptions, provides examples/explanations)*	☐	☐	☐	☐	☐	
Uses contextualized problems.	☐	☐	☐	☐	☐	
Uses clear modeling.	☐	☐	☐	☐	☐	
Uses guided practice.	☐	☐	☐	☐	☐	
Incorporates visual representations. *(e.g., CRA model)*	☐	☐	☐	☐	☐	
Uses planned examples.	☐	☐	☐	☐	☐	
Students have an opportunity for independent practice.	☐	☐	☐	☐	☐	
Content emphasizes conceptual understanding. *(procedural fluency can be present, but not emphasized)*	☐	☐	☐	☐	☐	

INSTRUCTIONAL PRACTICES	1	2	3	4	n/a	NOTES
Uses data to drive instruction. *(references assessment data or outcomes of student learning as it relates to instruction)*	☐	☐	☐	☐	☐	
Opportunity to develop fact fluency. *(should take no more than 10 minutes; emphasis on accuracy and efficiency, not speed)*	☐	☐	☐	☐	☐	

Teacher promotes multiple strategies for solving problems.	☐	☐	☐	☐	☐	
Teacher utilizes evidence-based mathematical practices.	☐	☐	☐	☐	☐	

STUDENT ENGAGEMENT	1	2	3	4	n/a	NOTES
Questions are primarily open-ended. *(students respond with more than a 1-2 word answer)*	☐	☐	☐	☐	☐	
Questions are primarily high-level. *(teacher elicits student justification and explanations)*	☐	☐	☐	☐	☐	
Students have opportunities to respond.	☐	☐	☐	☐	☐	
Students have a variety of ways to respond.	☐	☐	☐	☐	☐	
A variety of students participate in whole-group discussions.	☐	☐	☐	☐	☐	

STUDENT UNDERSTANDING	1	2	3	4	n/a	NOTES
Teacher checks for understanding. *(asks the right questions)*	☐	☐	☐	☐	☐	
Provides in-depth feedback. *(targeted and specific)*	☐	☐	☐	☐	☐	
Teachers allow an adequate amount of think/wait time.	☐	☐	☐	☐	☐	
Student responses are used to adjust instruction for individual learners. *(includes extension activities, extra practice, teachers does not move on until majority of learners demonstrate understanding)*	☐	☐	☐	☐	☐	

PRODUCTIVE DISPOSITION	1	2	3	4	n/a	NOTES
Teacher appears enthusiastic about mathematics and teaching students.	☐	☐	☐	☐	☐	
Fosters a sense that knowing math is important in our world.	☐	☐	☐	☐	☐	
Holds high expectations for all students, including those who appear to have difficulty with material.	☐	☐	☐	☐	☐	

CLASSROOM MANAGEMENT	1	2	3	4	n/a	NOTES
Routines and procedures are clear. *(instructional time is protected, lesson is delivered efficiently)*	☐	☐	☐	☐	☐	
Provides behavioral pre-corrects.	☐	☐	☐	☐	☐	
Gives positive, specific behavioral feedback.	☐	☐	☐	☐	☐	
Effectively responds to problem behavior.	☐	☐	☐	☐	☐	
Classroom is set up efficiently for classroom instruction.	☐	☐	☐	☐	☐	

OBSERVATION SUMMARY	*Opportunities for Improvement*	*Strengths*
Instructional Delivery		
Instructional Practices		
Student Engagement		
Student Understanding		
Productive Disposition		
Classroom Management		

Post-Observation Coaching Conversation

Teacher Name (First Name, Last Initial): **Teacher Study ID**:
Coach (First Name, Last Initial): **Coach Study ID**:
Date: / /20 **Time**: –
Focus of conversation (from Coaching Sequence):

Self-Assessment for teacher: *What is your comfort level with implementing the following DBI components?*

Today I feel…	**Very Comfortable**	**Mostly Comfortable**	**Somewhat Comfortable**	**Uncomfortable**	***n/a***
Student behavior/motivation	☐	☐	☐	☐	☐
ARPM and other assessments	☐	☐	☐	☐	☐
Instruction	☐	☐	☐	☐	☐
Decision-making	☐	☐	☐	☐	☐

Coaching Session Notes: *Coaches should interview their teacher about the items on the left. The coach should then, after the coaching session, complete the items on the right.*

Teacher Perspective (ASK teacher)	**Coach Perspective (NOT shared with teacher)**
What's working in your classroom to support the selected students? (**teacher's point of view**)	What did I notice that was working to support the selected students? (**coach's point of view**)
Review ARPM data for selected students. What are you noticing? (**teacher's point of view**)	What am I noticing about the ARPM data? (**coach's point of view**)
What has been working in terms of intensifying your instruction for the selected students? (**teacher's point of view**)	What did I notice about instructional intensifications for the selected students? (**coach's point of view**)
What have been some challenges/concerns about implementing DBI? (**teacher's point of view**)	What might be some STAIR Tailored PD to address these challenges? (**coach's point of view)**
Teacher's next steps:	Coach's next steps:

Next meeting: Date: / / 20 Time:	

Internal STAIR Data

What was the focus of the coaching session?

Check the amount of time spent on each category:

Student behavior/ motivation	ARPM and other assessments	Instructional strategies	Decision-making	Other (please explain):
☐ 0-5 minutes	☐ 0-5 minutes	☐ 0-5 minutes	☐ 0-5 minutes	☐ 0-5 minutes
☐ 6-10 minutes	☐ 6-10 minutes	☐ 6-10 minutes	☐ 6-10 minutes	☐ 6-10 minutes
☐ 11-15 minutes	☐ 11-15 minutes	☐ 11-15 minutes	☐ 11-15 minutes	☐ 11-15 minutes
☐ 16-20 minutes	☐ 16-20 minutes	☐ 16-20 minutes	☐ 16-20 minutes	☐ 16-20 minutes
☐ 20+ minutes	☐ 20+ minutes	☐ 20+ minutes	☐ 20+ minutes	☐ 20+ minutes

Coaches Codes:

B = beginning, D = developing, P = proficient

See rubric in Box for criteria for each code.

CBM
Instruction
DM

Coaches Log:

Activity	**Length (min)**
Prepare for Obs & Teacher Meeting	
Observation	
Teacher Meeting	
Prepare for Coaches' Meeting	
Total time for Session #	

NOTES:

Appendix B – SMU Observation Form

Teacher Name (First Name, Last Initial): _____ **Teacher Study ID: _____**
Coach (First Name, Last Initial): _____ **Coach Study ID: _____**
Date: ____/____/20_____ **Time: _____- _____**
Coaching Session Number (circle)**: 1 2 3**

PRE-Observation Coaching Conversation

Self-Assessment for teacher (Ask the teacher these questions)**:** *What is your comfort level with implementing the following DBI components?*

Today I feel…	Very Comfortable	Mostly Comfortable	Somewhat Comfortable	Uncomfortable	*Not covered yet in the program*
Student behavior/motivation					
CBM and other assessments					
Instruction					
Decision making					

Coaching Session Notes:

Teacher Perspective	**Coach perspective**
What's working in your classroom to support the selected students (**teacher's point of view**)	What do you want me to look for during instruction related supporting the selected students? (**coach's point of view**)
Review ARPM data for selected students. What are you noticing? (**teacher's point of view**)	What am I noticing? (**coach's point of view**)
What has been working with intensifying your instruction for the selected students? (**teacher's point of view**)	
What have been some challenges/concerns about implementing DBI?	What might be some STAIR Tailored PD to address these challenges?

Teacher's next steps:	Coach's next steps:
Classroom Observation: Date: ___/____/ 20__ at _____	

Internal DBI Program Use:

What was the focus of the PRE-Observation Coaching Conversation?

Circle the amount of time spent during the **POST-Observation Coaching Conversation** on each category:

Student behavior/ motivation	CBM and other assessment	Instructional strategies	Decision-making	Other (please explain): _____
0-5	0-5	0-5	0-5	0-5
6-10	6-10	6-10	6-10	6-10
11-15	11-15	11-15	11-15	11-15
16-20	16-20	16-20	16-20	16-20
20+	20+	20+	20+	20+

Observation Assessments

	What evidence is present during the Class Session
Reference to ARPM data:	
Reference to other classroom assessment data:	
--for formative purposes	
--for summative purposes	

Instruction

Modeling	Practice
Clear Explanation (what evidence is present during instruction?)	**Guided** (what evidence is present during instruction?)
Planned Examples (what evidence is present during instruction?)	**Independent** (what evidence is present during instruction?)

Supporting Practices
Asking the right questions (what evidence is present during instruction?)
Eliciting frequent responses (what evidence is present during instruction?)
Providing immediate specific feedback (what evidence is present during instruction?)
Maintaining a brisk pace (what evidence is present during instruction?)

Multiple Representations during Instruction

Concrete (what evidence is present during instruction?)	**Visual** (what evidence is present during instruction?)	**Abstract** (what evidence is present during instruction?)

POST-Observation Coaching Conversation

Self-Assessment for teacher (Ask the teacher these questions)**:** *What is your comfort level with implementing the following DBI components?*

Today I feel…	Very Comfortable	Mostly Comfortable	Somewhat Comfortable	Uncomfortable	*Not covered yet in the program*
Student behavior/motivation					
CBM and other assessments					
Instruction					
Decision making					

Coaching Session Notes:

Teacher Perspective	**Coach perspective**
What's working in DBI? (**teacher's point of view**)	What's working in DBI? (**coach's point of view**)
Challenges/concerns?	Potential solution to challenges/concerns:
Teacher's next steps:	Coach's next steps:
	Recommended STAIR Tailored videos:
Next meeting: Date: ___/____/ 20__ at _____ Focus of Conversation for Next Meeting: _____	

<u>Internal DBI Program Use:</u>

What was the focus of the POST-Observation Coaching Conversation?

Circle the amount of time spent during the **POST-Observation Coaching Conversation** on each category:

Student behavior/ motivation	CBM and other assessment	Instructional strategies	Decision-making	Other (please explain): _____
0-5	0-5	0-5	0-5	0-5
6-10	6-10	6-10	6-10	6-10
11-15	11-15	11-15	11-15	11-15
16-20	16-20	16-20	16-20	16-20
20+	20+	20+	20+	20+

OVERALL Coaching Notes:

Activity	**Length (min)**
Prepare for PRE-Observation Coaching Meeting	
Conducting PRE-Observation Coaching Meeting	
Classroom Observation	
Prepare for POST-Observation Coaching Meeting	
Conducting POST-Observation Coaching Meeting	
Total time for Session # _____	

Appendix C – Teacher Demographics Survey

Default Question Block

Teacher Demographic Information

Please fill out the demographic information below. This survey will take approximately 5 minutes.

This survey renders best on desktop or laptop computers, not mobile devices.

Please fill in the following information

First Name

Last Name

Home address (Street, City, State, Zip)

Please select the option(s) that best reflect your level of education.

	Yes	No	In Progress	If yes OR in progress, please list your degree below Degree
Bachelors Degree	☐	☐	☐	
Masters Degree	☐	☐	☐	
Post Masters Degree	☐	☐	☐	

What is your current title?

- ◯ Classroom teacher
- ◯ Special education teacher
- ◯ Math coach
- ◯ Interventionist
- ◯ Paraprofessional
- ◯ Other

Select the number of years experience you have in each area (If greater than 20 years, select 20 years)

	Years																				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Current position																					
Teaching experience																					
Years teaching middle school (6-8) students																					
Teaching in current school																					
Mathematics classroom teaching experience																					
Special education mathematics teaching experience																					

Please select the option(s) that best reflect your credentials

- [ ] K-6 teaching credential
- [ ] K-8 teaching credential
- [ ] Multiple subject (K-12)
- [ ] Secondary, single subject mathematics
- [ ] Mathematics specialist
- [ ] Reading specialist
- [ ] Special Education
- [ ] Administrative
- [ ] _____ Other (Please Specify)

Gender

- ○ Male
- ○ Female
- ○ Other

Race/Ethnicity

- [ ] Asian American/Pacific Islander
- [ ] Black/African American
- [ ] Hispanic/Latino American
- [ ] Native American
- [ ] White/European American
- [ ] Multiracial
- [ ] Other (Please specify)
- [ ] I prefer not to respond

Age

- ○ 20-29 years
- ○ 30-39 years
- ○ 40-49 years
- ○ 50-59 years
- ○ 60 years or greater

Within the last year, have you received any professional development in the following areas?

	Yes	No
Curriculum-based measurement (CBM)	○	○
Mathematics assessment	○	○
Data-based decision making	○	○

How many hours of professional development in Curriculum-based measurement (CBM)?

How many hours of professional development in mathematics assessment?

How many hours of professional development in data-based decision making?

What service-delivery model do you currently teach in?

- General education (e.g., students with IEPs receive none of their mathematics instruction in my class)
- Co-teaching (e.g., special educator and general educator teach together)
- Resource/pull-out (e.g., student with IEPs receive part of their mathematics instruction in general education and part of their mathematics instruction in special education)
- Self-contained (e.g., students with IEPs receive all of their mathematics instruction in my class)

Appendix D – Teacher Instructional Practices

Who should receive DBI

- ◯ All students
- ◯ Students in need of Tier 3 intervention in a Response to Intervention (RTI) system
- ◯ Students in special education
- ◯ Choices 2 and 3

Listed in the left column are descriptions of practices that teachers may or may not engage in when providing mathematics instruction. Using the scales described below, please click the box that represents the average frequency with which you implement that practice, your understanding of the practice, how important that practice is to you, and how prepared you feel to implement the practice in the classroom.

Data Based Individualization

	Frequency 0: Less often than 1 time per month 1: 1 time per month 2: 2-3 times per month 3: 1 time per week 4: 2-3 times per week 5: Everyday						Understanding of the practice 0: I don't know much about it 1: I know a little bit about it 2: I know some details about it 3: I know a lot about it				Importance of practice 0: Not very important 1: Somewhat important 2: Important 3: Very important				Confidence in implementing the practice 0: Not very confident 1: Somewhat confident 2: Confident 3: Very confident			
	0	1	2	3	4	5	0	1	2	3	0	1	2	3	0	1	2	3
Administer (weekly) measures of progress monitering	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Analyze progress monitoring data every (4) weeks	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Make instructional adaptations based on progress monitoring data	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
	0	1	2	3	4	5	0	1	2	3	0	1	2	3	0	1	2	3

Instructional Practices

Default Question Block

Teachers' Instructional Practices

This survey will take approximately 10-15 minutes and asks about your knowledge of DBI and your instructional practices.

This survey renders best on desktop or laptop computers, not mobile devices.

Please enter your name below

First name

Last name

All of the following are assumptions of DBI except:

- To provide effective individualized instruction, educators should implement instructional approaches that are research based
- A critical factor in making student decisions is student buy-in to the process
- We must test whether instructional approaches are effective for students
- We can use ongoing assessment data to determine whether an instructional approach is working for an individual student

Which is the most critical factor in DBI?

- Collecting assessment data once a year
- Getting parent buy-in before starting
- Using research-based assessments and interventions
- Using the same measures with all students

If a student is already receiving special education services, why implement DBI?

- Actually, DBI is only for students in need of intensive intervention who are NOT identified
- DBI provides a framework to help teach all students in a small group the same mathematics content
- When teachers use DBI correctly, student achievement can improve
- DBI can guarantee that a students will achieve his/her yearly IEP goal in mathematics

	Frequency 0: Less often than 1 time per month 1: 1 time per month 2: 2-3 times per month 3: 1 time per week 4: 2-3 times per week 5: Everyday						Understanding of the practice 0: I don't know much about it 1: I know a little bit about it 2: I know some details about it 3: I know a lot about it				Importance of practice 0: Not very important 1: Somewhat important 2: Important 3: Very important				Confidence in implementing the practice 0: Not very confident 1: Somewhat confident 2: Confident 3: Very confident			
	0	1	2	3	4	5	0	1	2	3	0	1	2	3	0	1	2	3
Explicitly model mathematics concepts and procedures	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Provide guided practice opportunities (i.e. teacher and students working together; students working together)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Provide independent practice opportunities	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Use planned examples	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Use multiple representations (concrete, representational, and abstract), linking back to concepts or procedures	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Use precise mathematical vocabulary and mathematics terminology	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Use questioning strategies that elicit a variety of student responses (why, when, how)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Require students to respond frequently	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	0	1	2	3	4	5	0	1	2	3	0	1	2	3	0	1	2	3

Instructional Practices

	Frequency 0: Less often than 1 time per month 1: 1 time per month 2: 2-3 times per month 3: 1 time per week 4: 2-3 times per week 5: Everyday						Understanding of the practice 0: I don't know much about it 1: I know a little bit about it 2: I know some details about it 3: I know a lot about it				Importance of practice 0: Not very important 1: Somewhat important 2: Important 3: Very important				Confidence in implementing the practice 0: Not very confident 1: Somewhat confident 2: Confident 3: Very confident			
	0	1	2	3	4	5	0	1	2	3	0	1	2	3	0	1	2	3
Provide opportunities for student discourse around important concepts in mathematics	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Provide affirmative feedback	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

	Frequency 0: Less often than 1 time per month 1: 1 time per month 2: 2-3 times per month 3: 1 time per week 4: 2-3 times per week 5: Everyday						Understanding of the practice 0: I don't know much about it 1: I know a little bit about it 2: I know some details about it 3: I know a lot about it				Importance of practice 0: Not very important 1: Somewhat important 2: Important 3: Very important				Confidence in implementing the practice 0: Not very confident 1: Somewhat confident 2: Confident 3: Very confident			
	0	1	2	3	4	5	0	1	2	3	0	1	2	3	0	1	2	3
Provide corrective feedback	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Make adjustments to lessons to address students' needs	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Pace lessons to the developmental level/needs of students and the purpose of the lesson	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Encourage students to search for multiple solution strategies and to recognize task constraints that may limit solution possibilities	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Build fluency with facts, computation, etc.	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Teach effective problem-solving strategies	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	0	1	2	3	4	5	0	1	2	3	0	1	2	3	0	1	2	3

Assessment Practices

	Frequency 0: Less often than 1 time per month 1: 1 time per month 2: 2-3 times per month 3: 1 time per week 4: 2-3 times per week 5: Everyday						Understanding of the practice 0: I don't know much about it 1: I know a little bit about it 2: I know some details about it 3: I know a lot about it				Importance of practice 0: Not very important 1: Somewhat important 2: Important 3: Very important				Confidence in implementing the practice 0: Not very confident 1: Somewhat confident 2: Confident 3: Very confident			
	0	1	2	3	4	5	0	1	2	3	0	1	2	3	0	1	2	3
Use data from classroom assessments to change or modify instruction	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Use data from a variety of sources to identify which concepts students are struggling to grasp	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Use screening data to determine which students may be at-risk for failure	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Use screening data to determine the intensity of supplemental instruction students need	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

	Frequency 0: Less often than 1 time per month 1: 1 time per month 2: 2-3 times per month 3: 1 time per week 4: 2-3 times per week 5: Everyday						Understanding of the practice 0: I don't know much about it 1: I know a little bit about it 2: I know some details about it 3: I know a lot about it				Importance of practice 0: Not very important 1: Somewhat important 2: Important 3: Very important				Confidence in implementing the practice 0: Not very confident 1: Somewhat confident 2: Confident 3: Very confident			
	0	1	2	3	4	5	0	1	2	3	0	1	2	3	0	1	2	3
Use progress monitoring data to determine growth	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Use progress monitoring data to determine effectiveness of instructional approaches for meeting students' needs	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Use assessments to find out what students know **before** a unit begins	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Use assessments to find out what students know **during** the unit	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	0	1	2	3	4	5	0	1	2	3	0	1	2	3	0	1	2	3

Culture/Climate

To what degree do you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Agree	Strongly Agree
My school has a shared vision of effective instruction in mathematics	○	○	○	○
I regularly share ideas and materials with other mathematics teachers	○	○	○	○
I have time during the regular school week for collaboration with other teachers	○	○	○	○

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Appendix E – Teacher Self-Efficacy Scale

Appendix F – Professional Development Satisfaction

Default Question Block

Project STAIR Core Professional Development Satisfaction

This survey will take approximately 5 minutes and for your feedback on the Project STAIR Core Professional Development.

This survey renders best on desktop or laptop computers, not mobile devices.

Please enter your name below

First name

Last name

To what extent do you agree with the following statements:

	Strongly disagree	Disagree	Agree	Strongly Agree
The Project STAIR professional development was a valuable professional development opportunity	○	○	○	○
The knowledge I gained at the Project STAIR professional development will help me improve my mathematics instruction	○	○	○	○
The content of the Project STAIR professional development met my expectations	○	○	○	○
I will share the knowledge I gained from the Project STAIR professional development experience with my colleagues	○	○	○	○
The Project STAIR professional development was appropriately interactive	○	○	○	○

The Project STAIR professional development deepened my understanding of:

	Strongly disagree	Disagree	Agree	Strongly Agree
Data-based individualization	○	○	○	○
Evidence-based instructional practices in mathematics	○	○	○	○
Formative assessments	○	○	○	○

The follow-up coaching and support planned for the school year will help me apply the following concepts in my classroom:

	Strongly disagree	Disagree	Agree	Strongly Agree
Data-based individualization	◯	◯	◯	◯
Evidence-based instructional practices in mathematics	◯	◯	◯	◯
Formative assessments	◯	◯	◯	◯

What areas of the **Project STAIR professional development** were most useful to you?

Which areas of the **Project STAIR professional development** need improvement?

Is there anything else you would like to share about the **Project STAIR professional development**?

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