

# Project STAIR: Preliminary Findings

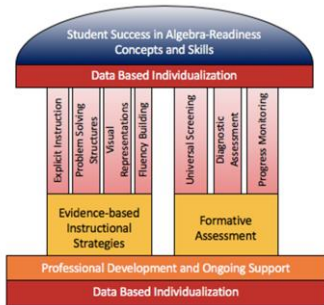
## Supporting Teaching of Algebra: Individual Readiness

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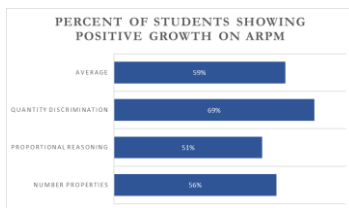
### PROJECT STAIR

- Office of Special Education Programs model demonstration
- 3 years; 3 sites
- general education mathematics teachers
- middle school students (Grades 6–8) with learning disabilities or difficulties in the area of mathematics



### STUDENT OUTCOMES

Algebra Readiness Progress Monitoring (ARPM)



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The Project STAIR model increased middle school mathematics teachers' **Data-Based Individualization** knowledge and frequency of use, as well as middle school students' **algebra readiness**.

Project STAIR Website



STAIR Tailored Videos



### TEACHER OUTCOMES

Teacher Instructional Practices Survey (TIPS)

| Teachers' Instructional practices |   | Pre (N=22) |      | Post (N=23) |      | t     | p       |
|-----------------------------------|---|------------|------|-------------|------|-------|---------|
|                                   |   | M          | SD   | M           | SD   |       |         |
| Data Based Individualization      | Importance of practice                  | 2.44       | 0.69 | 2.35        | 0.54 | .65   | .525    |
|                                   | Understanding of the practice           | 2.05       | 0.78 | 2.48        | 0.50 | 2.31  | .031*   |
|                                   | Confidence in implementing the practice | 1.95       | 0.78 | 2.29        | 0.66 | .80   | .088    |
|                                   | Frequency of implementing the practice  | 2.42       | 1.03 | 2.83        | 1.13 | 1.30  | .210    |
| Instructional Practices           | Importance of practice                  | 2.77       | 0.21 | 2.74        | 0.31 | -.51  | .617    |
|                                   | Understanding of the practice           | 2.66       | 0.30 | 2.83        | 0.24 | 2.25  | .036*   |
|                                   | Confidence in implementing the practice | 2.56       | 0.38 | 2.74        | 0.31 | 1.66  | .112    |
|                                   | Frequency of implementing the practice  | 4.30       | 0.39 | 4.49        | 0.48 | 2.03  | .055    |
| Assessment Practices              | Importance of practice                  | 2.40       | 0.48 | 2.66        | 0.51 | 2.86  | .009*   |
|                                   | Understanding of the practice           | 2.28       | 0.51 | 2.82        | 0.31 | 4.58  | .000*** |
|                                   | Confidence in implementing the practice | 2.24       | 0.57 | 2.75        | 0.38 | 3.92  | .001**  |
|                                   | Frequency of implementing the practice  | 2.39       | 1.01 | 1.94        | 1.15 | -1.93 | .068    |
| Culture/Climate                   |   | 3.20       | 0.61 | 3.45        | 0.51 | 2.26  | .034*   |

Note: p\*\*\*<.000, p\*\*<.001, p\*<.05, p<.05

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 – Provide independent practice opportunities

### Teacher Self-Efficacy

| Question  | Pre        |            | Post       |            | t     | p     |
|---|------------|------------|------------|------------|-------|-------|
|   | M (SD)     | M (SD)     | M (SD)     | M (SD)     |       |       |
| I am confident in my ability to teach math to the students in the grade I currently teach   | 2.50 (.76) | 2.95 (.22) | 2.95 (.22) | 2.95 (.22) | -2.65 | .016* |
| I like to teach math  | 2.55 (.76) | 2.95 (.22) | 2.95 (.22) | 2.95 (.22) | -2.18 | .042* |
| I can effectively teach math  | 2.50 (.76) | 2.85 (.37) | 2.85 (.37) | 2.85 (.37) | -1.79 | .090  |
| I am confident that I can answer questions about math that my students ask                  | 2.60 (.75) | 2.85 (.37) | 2.85 (.37) | 2.85 (.37) | -1.56 | .135  |
| I would be confident if my supervisor wanted to observe me teaching a math lesson           | 2.45 (.76) | 2.75 (.72) | 2.75 (.72) | 2.75 (.72) | -1.30 | .21   |
| I know how to do the math, but I am not comfortable explaining how I got the answer         | 0.65 (.81) | 0.65 (.93) | 0.65 (.93) | 0.65 (.93) | .00   | 1.00  |
| I understand the concepts in math, but may not be able to do the steps to solve the problem | .55 (.95)  | .50 (.83)  | .50 (.83)  | .50 (.83)  | -.18  | .86   |

3- Strongly agree, 2- Agree, 1- Disagree, 0- Strongly disagree P<.001 \*\*\*, p<.01\*\*, p<.05 \*

### FUTURE DIRECTIONS

- Revise materials and coaching protocols
- Reduce barriers to implementation
- Implement with Cohort 2 (random assignment)