

Abstract Title Page

Title: Emerging Leaders Program: Impacts on Students, Teachers, and Leaders in Three Sites

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Abstract Body

Background / Context:

New Leaders launched the Emerging Leaders program to develop the instructional leadership skills of teachers, instructional coaches, and assistant principals to support more robust school leadership pipelines in partner districts and to train teacher leaders to guide and support instructional improvement in their schools.

Central to the Emerging Leaders' theory of action is participants' work leading instructional teams through cycles of data-driven instruction (DDI). Despite long-standing practitioner interest in DDI (Halverson et al., 2007; AASA, 2002), there is a scant body of causal evidence to examine its effectiveness on student achievement (Hamilton et al., 2009). This study (with Cavalluzzo et al., 2014 and Gleason et al., 2019) is only the third randomized control trial (RCT) to estimate the effects of instructional teams working through a structured DDI process.

Purpose / Objective / Research Question / Focus of Study:

This RCT estimates the effects of Emerging Leaders on participants' leadership skills, instructional team members' practice, and student achievement. The study also includes measures of implementation fidelity, treatment-control contrast, and qualitative implementation findings to support interpretation of impact estimates.

Setting:

The study was conducted in Arlington Independent School District (Texas), San Antonio Independent School District (Texas), and Shelby County Schools (Tennessee).

Population / Participants / Subjects:

The assigned sample consisted of:

- 112 Emerging Leaders candidates in the three study districts
- 398 teachers assigned to a candidate's instructional team within the first 6 weeks of school
- 6,802 students in math and 7,310 students in ELA. The student sample is limited to:
 - Students on the class roster of an instructional team member within the first 6 weeks of school
 - Math and ELA, using the test aligned to the instructional team's designated focus.
 - Grades for which cohorts have pre- and post-test scores (generally 4-8).

Intervention / Program / Practice:

During the 1-year program, participants received training and completed job-embedded assignments to coach instructional teams to set goals, engage in regular DDI cycles, design corrective instruction to address student misconceptions, and monitor student progress. The program was designed to develop the leadership skills of Emerging Leaders participants, expand the use of DDI strategies by instructional team members, and, ultimately, to increase the achievement of students taught by instructional team members (Valdez, Broin, & Carroll, 2015).

Research Design:

New Leaders recruited Emerging Leaders candidates in the study districts. Candidates' principals identified an instructional team to lead during the program year (e.g., 4th grade ELA). Researchers then randomly assigned these candidates to two groups: Group I (treatment) participated in the Emerging Leaders program in 2017–18 and Group II (control) delayed participation until 2018–19. Randomization was conducted within blocks determined by district, grade range, and subject focus.

Data Collection and Analysis:

The study estimated program impact on Emerging Leaders participants' leadership skills, as measured by an assessment of DDI leadership knowledge. Researchers also assessed impacts on instructional team members' practice using a daily log with questions about instructional planning, use of student data, corrective instruction, and student efficacy strategies. We used state assessment data to measure impacts on student achievement.

We analyzed data using OLS models or, for clustered data, HLM models. Mediation results use two-stage least squares models. All models account for blocked randomization and use pre-test covariates.

Findings / Results:

- The Emerging Leaders program was largely implemented as designed.
- Instructional team members described their DDI work as more structured, rigorous, and effective than the DDI work they had attempted in the past, though teams sometimes failed to move beyond initial steps in reviewing and analyzing student work. When instructional teams did engage in planning for corrective instruction, math-focused teams identified a specific misconception or an academic skill that required additional instructional support; ELA teams were unlikely to make this connection.
- The Emerging Leaders program had a positive and statistically significant impact on all three facets of DDI leadership knowledge measured: using multiple forms of data to drive student achievement ($g = .95, p < .01$), leading a team through a DDI cycle ($g = .90, p < .01$), and understanding of efficacy concepts ($g = .94, p < .01$) (Figure 1). There were no differences in impacts by subject.
- The Emerging Leaders program had a positive impact on two corrective instruction practices among teachers in math-focused instructional teams: review of assessment data looking for students' incorrect answers (52% Group I; 24% Group II, $p < .001$) and selection of new instructional strategies for revisiting past content (84%; 65%, $p < .05$). The program did not have these effects on teachers in ELA-focused teams. (Figure 2.) There were no notable impacts on teachers' planning practice when teachers were analyzed without respect to team focus.
- The Emerging Leaders program's overall impact on math achievement was positive and approached (but did not meet) the threshold for statistical significance ($g = .20, p < .1$; Figure 3). Point estimates were positive for nine of the ten student subgroups analyzed, with statistically significant impacts on the math achievement of: female students ($g = 0.22, p < .05$), Latinx students ($g = 0.32, p < .05$), English learners ($g = 0.41, p < .01$), and economically disadvantaged students ($g = 0.26, p < .05$). (Figure 4a & 4b).

- Program impacts on math achievement were mediated in ways that support Emerging Leaders' theory of action: program impacts operated both through students having teachers regularly attend instructional team meetings ($g = 0.23, p < 0.05$) and through Emerging Leaders participants' DDI leadership knowledge ($g = 0.24, p < .05$). (Figure 3.)
- The Emerging Leaders program had no measured effect on student ELA achievement. (Figure 3, 4a, & 4b.)

Conclusions:

- Instructional teams engaged in DDI work benefit from trained leadership, protected time for teams to engage in this work, and tools to structure their practice.
- Despite Emerging Leaders' similar effects on the DDI leadership knowledge of participants leading math- and ELA-focused teams, these leaders drove different changes in both their instructional teams' instructional planning practice and student achievement in the instructional teams' classrooms, suggesting that ELA-focused instructional teams may require different or additional supports to improve student achievement.
- The Emerging Leaders program may provide a model for scaffolded leadership development that begins before assuming the principalship and operates via structured, job-embedded assignments with a focus on individual elements of leadership.

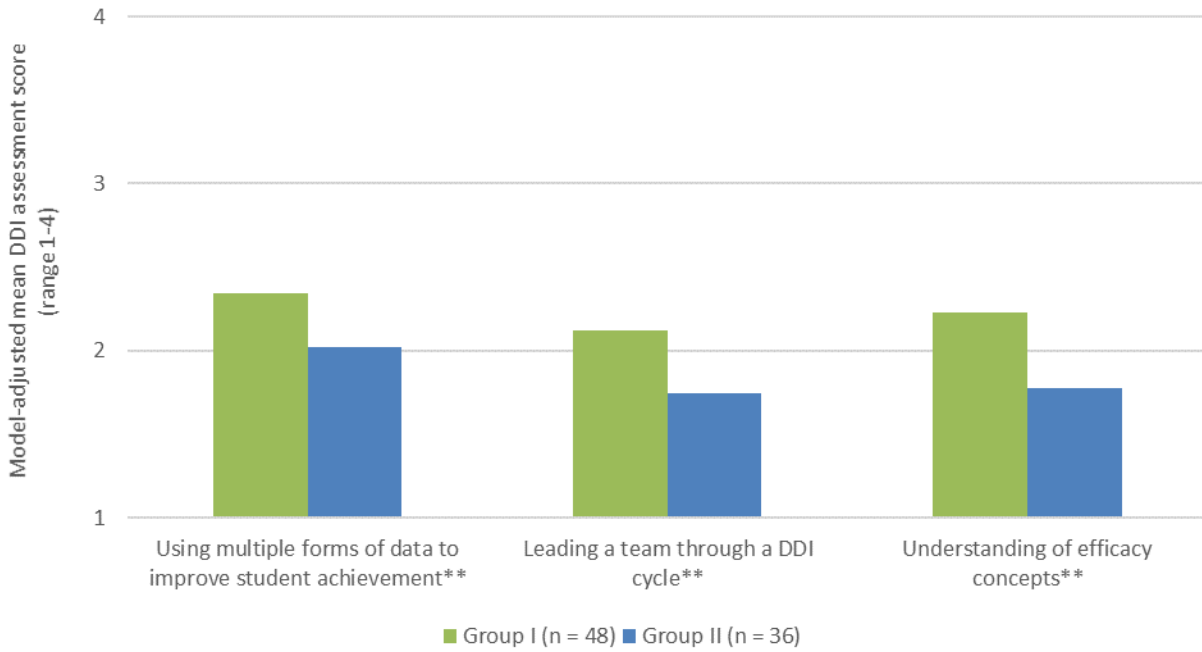
Appendices

Appendix A. References

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Appendix B. Tables and Figures

Figure 1: Impacts on DDI Leadership Knowledge Competencies

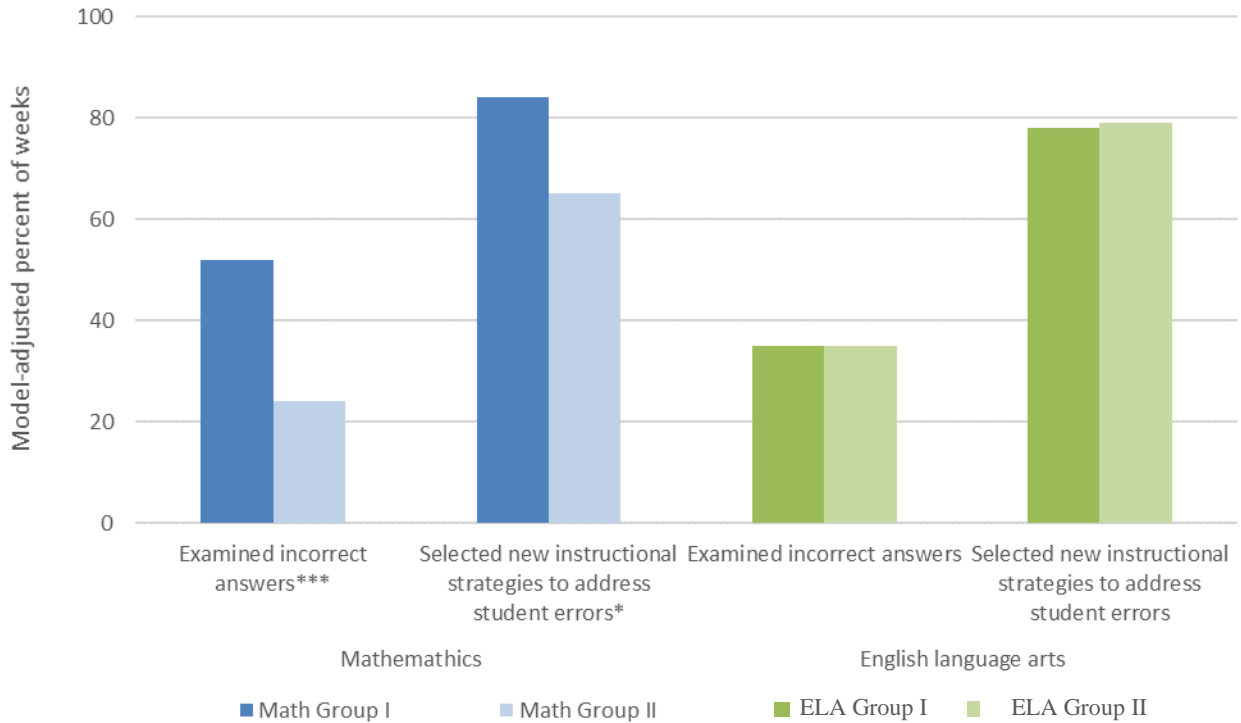


~ $p < .1$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Source: DDI assessment scores, spring 2018.

Note: Assessment score range: 1 = unproductive; 2 = approaching proficient; 3 = proficient; 4 = advanced.

Figure 2: Impacts on Math Teachers’ Instructional Practices: Reviewing Assessment Data and Corrective Instruction Action Planning



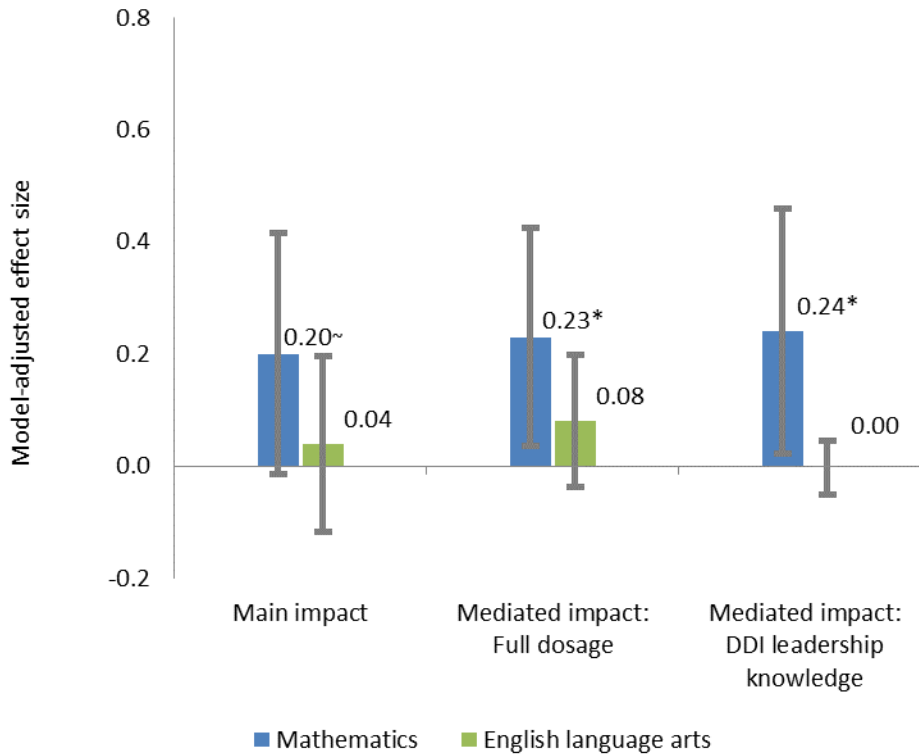
* $p < .05$, ** $p < .01$, *** $p < .001$.

Source: SRI instructional log, spring 2018.

Note: The exhibit shows 2 of 10 possible teacher outcomes in the areas of reviewing assessment data and corrective instruction action planning (see items highlighted in green). There were no measurable impacts on other outcomes for math teachers.

Sample: For ELA, 59 instructional teams, 302 log weeks. For math, 45 instructional teams, 249 log weeks.

Figure 3: Emerging Leaders Impacts on Student Achievement: Main Impacts and Impacts Mediated by Students' Experience of the Program and Participants' DDI Leadership Knowledge

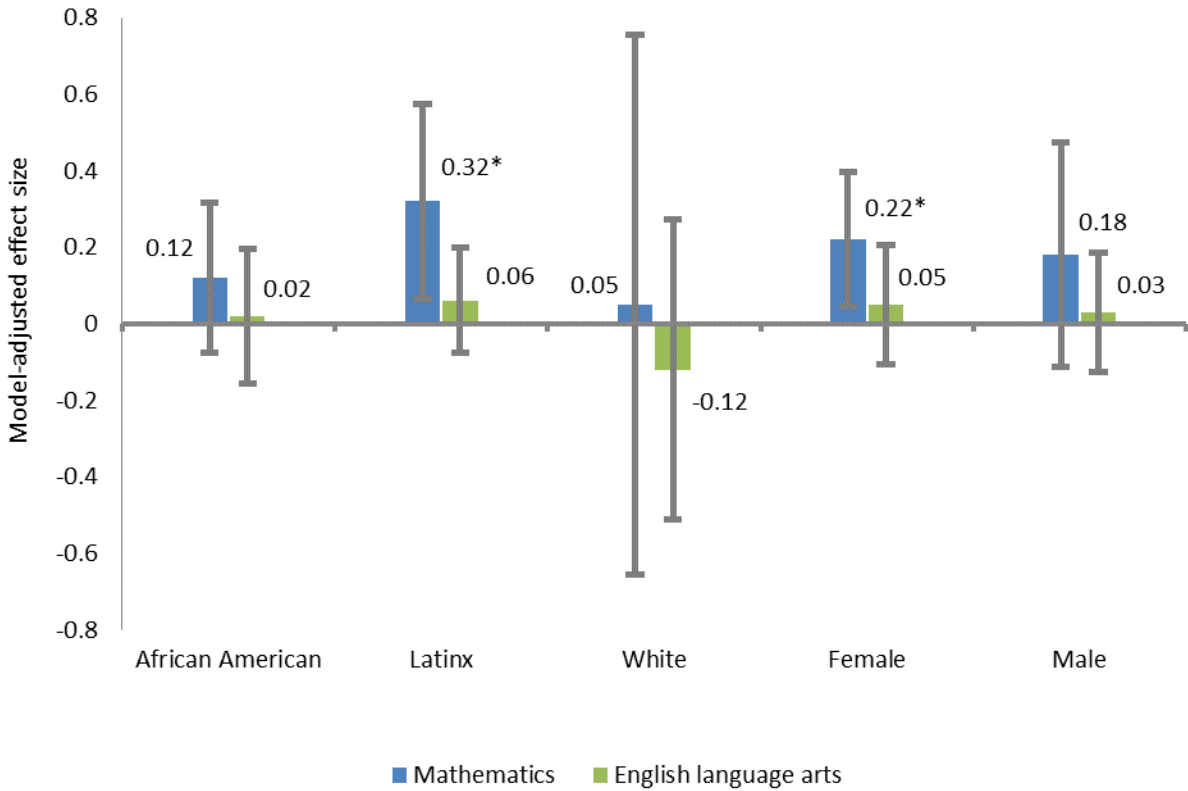


~ $p < .1$, * $p < .05$, ** $p < .01$. Grey brackets represent the 95% confidence interval of the estimated effect size.

Source: State English language arts and math assessments, 2017–18.

Samples: For ELA main impact, 33 instructional teams and 5,446 students. For math main impact, 28 instructional teams and 6,317 students. For ELA mediated impact (full dosage), 30 instructional teams and 4,986 students. For math mediated impact (full dosage), 28 instructional teams and 5,875 students. For ELA mediated impact (DDI leadership knowledge), 23 instructional teams and 3,765 students. For math mediated impact (DDI leadership knowledge), 23 instructional teams and 4,805 students.

Figure 4a: Estimated Treatment Effects by Student Subgroup

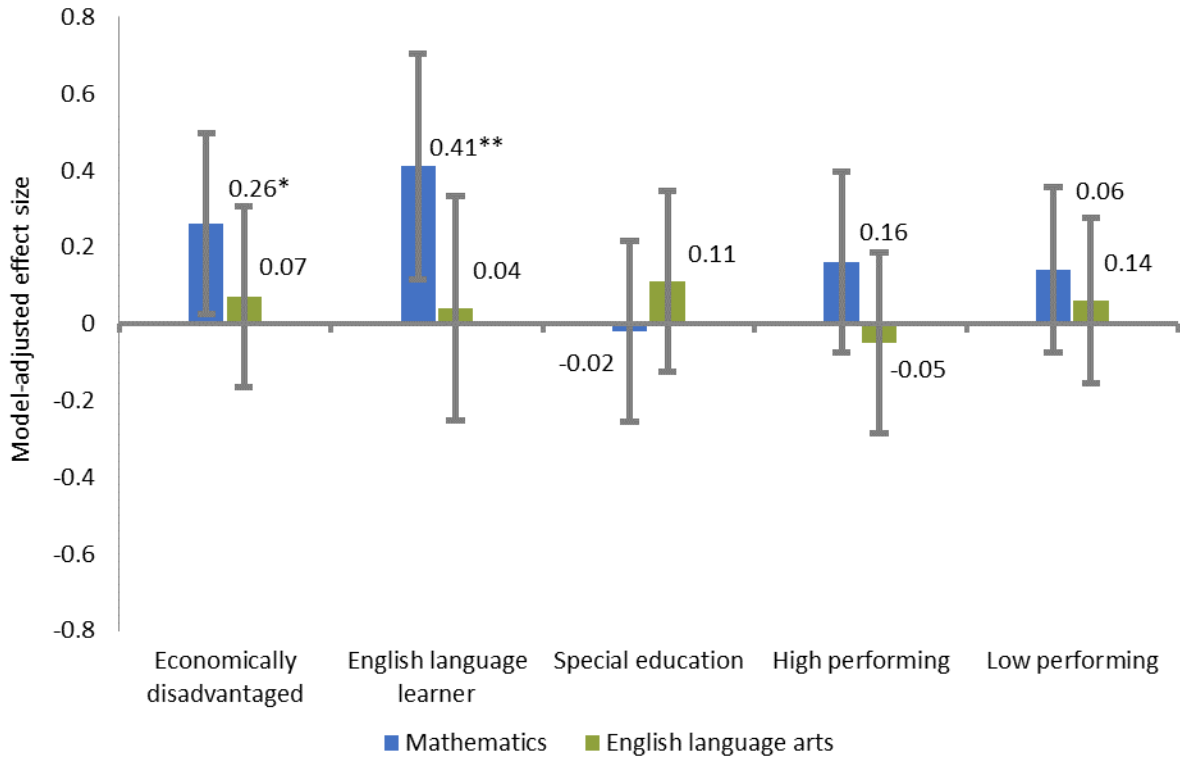


$\sim p < .1$, $*p < .05$, $**p < .01$, $***p < .001$. Grey brackets represent the 95% confidence interval of the estimated effect size.

Source: District data, state assessment outcomes, 2017–18 school year.

Samples: For African American students, 27 instructional teams in math and 3,181 students, 31 instructional teams in ELA and 1,907 students. For Latinx students, 27 instructional teams in math and 2,370 students, 32 instructional teams in ELA and 2,805 students. For White students, 21 instructional teams in math and 497 students, 24 instructional teams in ELA and 387 students. For female students, 28 instructional teams in math and 3,047 students, 32 instructional teams in ELA and 2,663 students. For male students, 28 instructional teams in math and 3,270 students, 33 instructional teams in ELA and 2,783 students.

Figure 4b: Estimated Treatment Effects by Student Subgroup



$\sim p < .1$, $*p < .05$, $**p < .01$, $***p < .001$. Grey brackets represent the 95% confidence interval of the estimated effect size.

Source: District data, state assessment outcomes, 2017-18 school year.

Note: “Low-performing” is the bottom quartile of the achievement distribution at baseline, and “High-performing” is the top quartile.

Samples: For economically disadvantaged students, 28 instructional teams in math and 3,440 students, 33 instructional teams in ELA and 3,711 students. For English learner students, 25 instructional teams in math and 932 students, 28 instructional teams in ELA and 1,295 students. For special education students, 28 instructional teams in math and 584 students, 31 instructional teams in ELA and 467 students. For high-performing students, 27 instructional teams in math and 1,480 students, 32 instructional teams in ELA and 1,493 students. For low-performing students, 28 instructional teams in math and 1,644 students, 33 instructional teams in ELA and 1,248 students.