Early Opportunities to Strengthen Academic Readiness

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NAGC Conference

November 5, 2016

This project is supported under the Javits Gifted and Talented Students Education Grant Program, PR/Award Number S206A140017, as administered by the OESE, U.S. Department of Education.

Project SPARK: Supporting and Promoting Advanced Readiness in Kids

- Focus on **early awareness/identification/ intervention** to support high **potential**
- Emphasis at **grades K-2** in schools with high populations from **underserved** groups
- Application/scaling up of the Young Scholars Model in 4 Connecticut school districts over 5 years (2014-2019)
  - *Access* to advanced learning opportunities
  - *Affirmation* of high academic potential
  - *Advocates* for students

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Project Goals

- **Goal 1:** To increase the rate of identification of and services to students from underrepresented groups in gifted programs.
- **Goal 2:** To promote achievement of high-potential students from underrepresented groups, thereby reducing the excellence gap.
- **Goal 3:** To increase student readiness for gifted program participation through engagement in challenging curriculum and cluster grouping for instruction.
- **Goal 4:** To promote professional practice that will support the identification and development of emergent talent.
- **Goal 5:** To disseminate results of the project and resources for replication.

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Challenges for High-Potential Students from Low-Income Backgrounds

- Likelihood of referral/identification
  - Teacher perceptions
  - Background knowledge/experience
  - School district structures and procedures
- Access to programming
  - In school
  - Outside of the school day
- Reluctance to identify/provide services in the early grades
- Cultural/individual resistance or differences in understanding
- Maintaining high performance levels over time

Procedures

- Teacher introduction to the project and the behaviors to observe
- *Response Lessons in treatment schools to support teachers in recognizing high-potential behaviors*
- Annual referrals (in spring) for students in grades K-2 in treatment and comparison schools (with consultation with project team), followed by parent information and consent process
- Initial (NNAT2) and ongoing (NWEA) assessments for learners
- *Summer program for treatment school students with advanced mathematics curriculum* (M^2 units)
- Professional development opportunities for teachers

Research Questions

1. What are the effects of the summer program on mathematics achievement growth over the summer?
2. What are the effects of the treatment during the school year (cluster grouping) on academic year mathematics achievement growth?
3. If an effect is found, does that effect differ for students from low-income backgrounds?
4. If an effect is found, what is the effect when only comparing students from low-income backgrounds in the treatment and comparison groups?

SPARK Summer Program Outline – Summer 2015

- Geometry unit from Project M^2
- Professional development for teachers
- 3-4 weeks, 3 hours per day
- Cross-age grouping
- 3 districts, 4 schools, 9 classrooms

School Sample

- District A
  - 8 schools
  - 30-84% students eligible for free or reduced lunch (district mean = 55%)
- District B
  - 2 schools
  - 49-57% students eligible for free or reduced lunch (district mean = 44%)
- District C
  - 2 schools
  - 24-27% students eligible for free or reduced lunch (district mean = 21%)

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Student Sample (Year 1-2)

- 276 students, K-2
  - 158 treatment
  - 111 attended summer program
- 10% ELL
- 13% Black or Hispanic
- 38% received a meal subsidy (state = 38%)

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Instruments – Baseline Measures

- Gifted Behavior Rating Scale (GBRS)
  - Exceptional Ability to Learn
  - Exceptional Application of Knowledge
  - Exceptional Creative/Productive Thinking
  - Exceptional Motivation to Succeed
- Naglieri Nonverbal Abilities Test-2nd Edition (NNAT-2)

Instruments – Achievement Measure

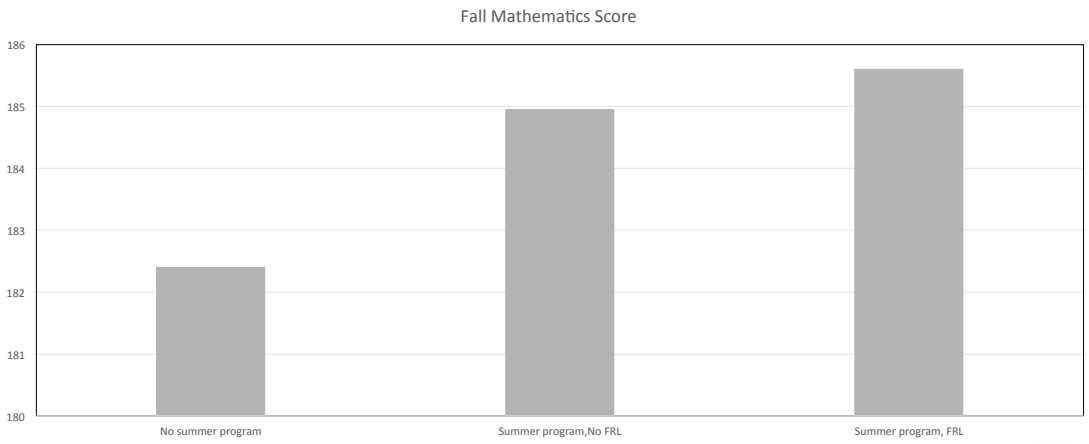
- Measures of Academic Progress (MAP) - Mathematics

Occasion	N	Mean (SD)	1	2	3	4
1. Spring 2015	217	180.52 (18.63)	--			
2. Fall 2015	271	180.83 (17.12)	.90	--		
3. Winter 2016	270	185.98 (17.28)	.86	.88	--	
4. Spring 2016	261	191.28 (17.62)	.76	.82	.85	--

RQ1 Effects of Summer Program
RQ2 Effects of Cluster Grouping (Academic Year)

- Average pretest mathematics score = 183.58
- Summer growth
  - Students not in summer program saw a decrease of 0.04 points per month (N.S.)
  - Students in the summer program saw a positive difference of 0.54 points per month in that growth (p = .008) Effect size = 0.92
- Academic year growth
  - Students in the comparison group saw an increase of 1.30 points per month (p < .001)
  - Students in the treatment group saw a positive difference of 0.29 points per month in that growth (NS)

RQ3 Program Effects for Low-Income Students



RQ4 Comparing Only Low-Income Students

- Average pretest mathematics score = 179.53
- Summer growth
  - Students not in summer program saw a decrease of 0.22 points per month (N.S.)
  - Students in the summer program saw a positive difference of 0.89 points per month in that growth (p = .01) Effect size = 1.62
- Academic year growth
  - Students in the comparison group saw an increase of 1.56 points per month (p < .001)
  - Students in the treatment group saw a positive difference of 0.16 points per month in that growth (NS)

Discussion/Implications

- Value of intervention in out-of-school time setting focused on advanced learner needs
  - Summer program effects
  - Advanced curriculum
  - Early intervention
- Potential of added value for students from low-income backgrounds
- Importance of professional supports for teachers – summer programming may not be sufficient to maintain gains
- Questions remain on "dosage" effects over a longer term