



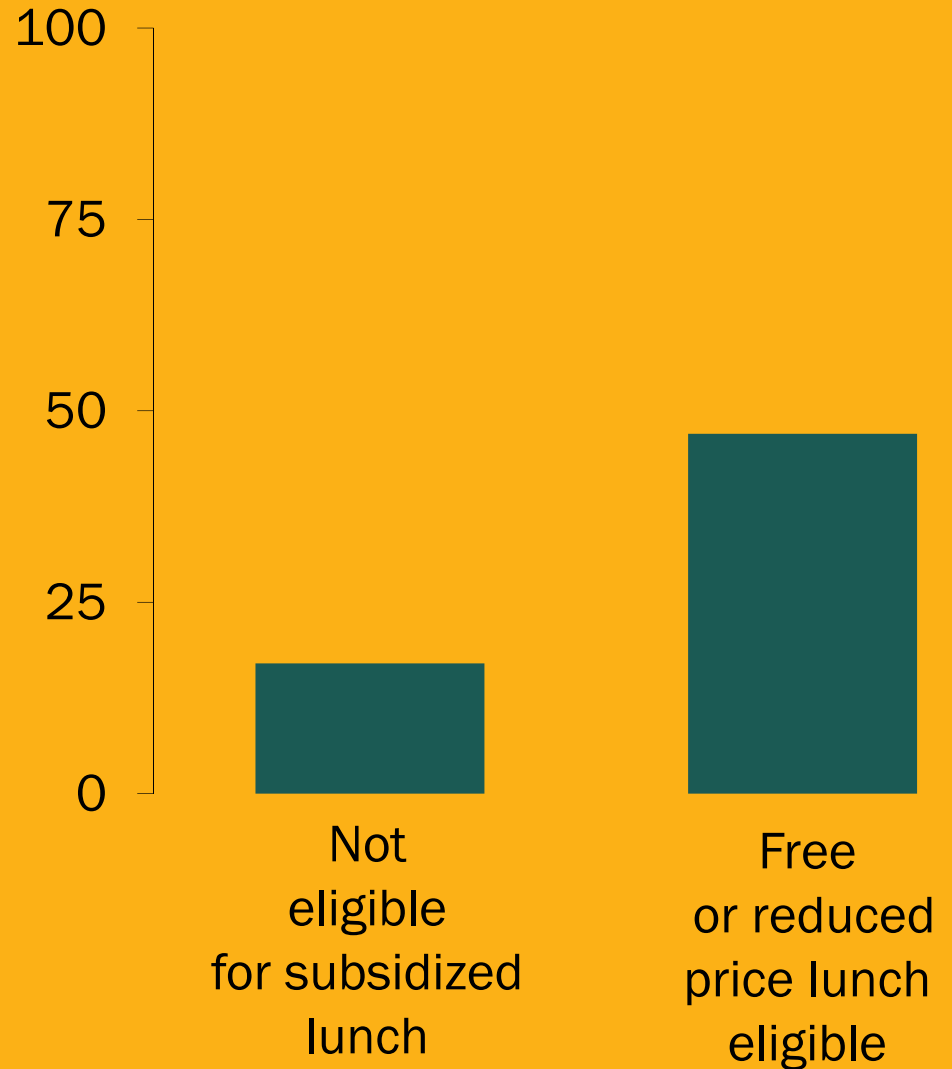
Ready for Fall? Near-Term Effects of Voluntary Summer Learning Programs on Low-Income Students' Learning Opportunities and Outcomes

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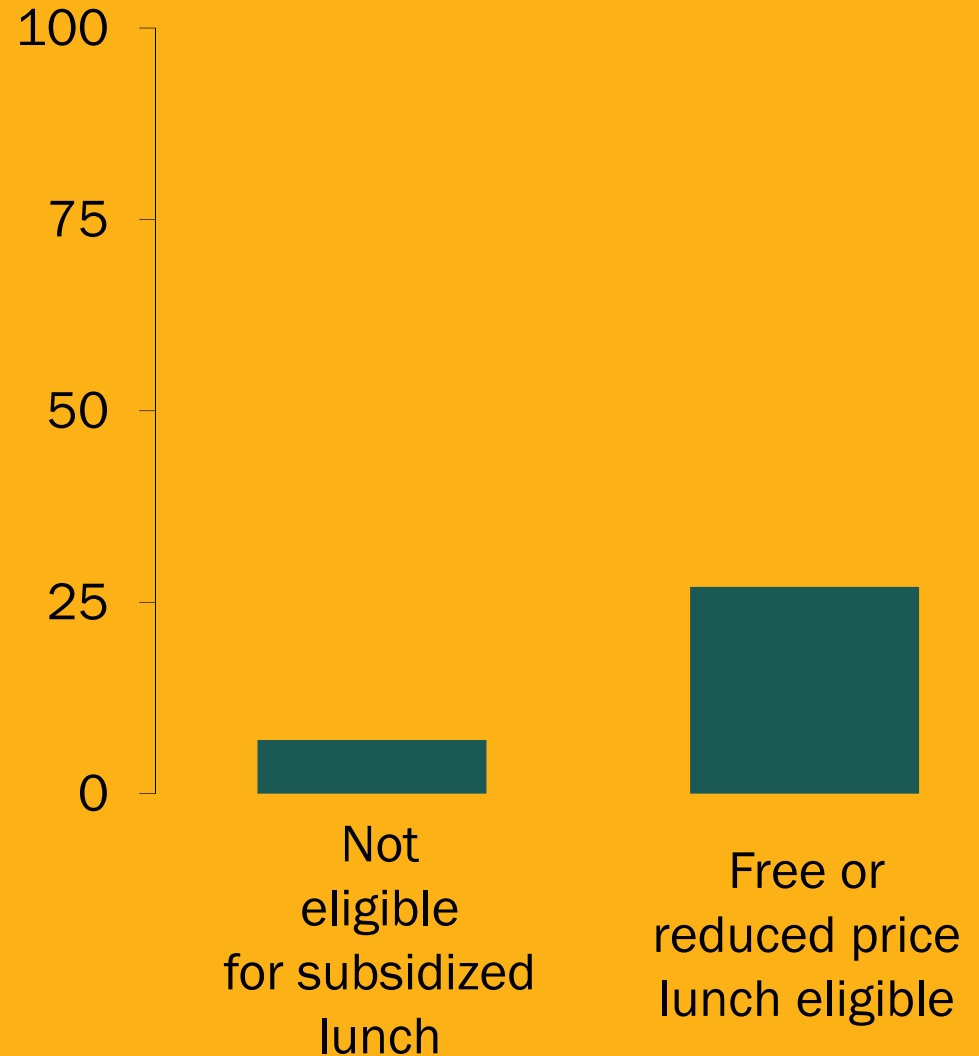
The academic achievement gap is persistent (reading)

Percentage of U.S. 4th graders scoring below basic in reading (2013)



The academic achievement gap is persistent (mathematics)

Percentage of U.S. 4th graders scoring below basic in mathematics (2013)



Recent evidence of summer learning loss confirms prior research

- In high-income schools, students gain in both reading and math over the summer
- In middle-income schools, there is neither summer learning loss nor gain
- In low-income schools, students lose knowledge in both reading and math over the summer

McEachin and Atteberry (under review)

There is also an “enrichment” gap



**Low-income kids have fewer opportunities
for structured activities**

It is important to understand the effects of summer learning programs

- Evidence of summer learning loss, particularly for children in poverty
- Prior research established that some but not all summer learning programs can improve academic outcomes
- Little is known about the effects of large-scale voluntary summer programs

Topics

- *The National Summer Learning Study*
 - Near-term student outcomes
 - Implementation analyses
 - Summary and recommendations

**The National
Summer
Learning Study is
part of a larger
project funded by
The Wallace
Foundation**

- Provides children from low-income families with strong summer learning programs
- Funds RAND's investigation into whether or not voluntary, district-run summer programs improve low-income students' academic and other outcomes

Five districts across the country were selected for the study



What was asked of all of the district programs?

- Full day, for 5-6 weeks, providing both academics and enrichment
- At least 3 hours of academic instruction per day, taught by certified teachers
- Standard curriculum used for all students in the district program
- Small class sizes of no more than 15 students
- No cost to families, with free transportation and meals

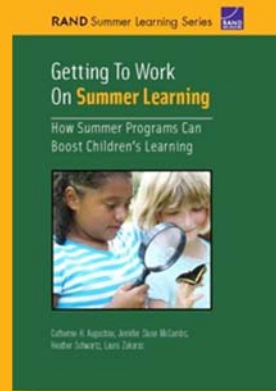
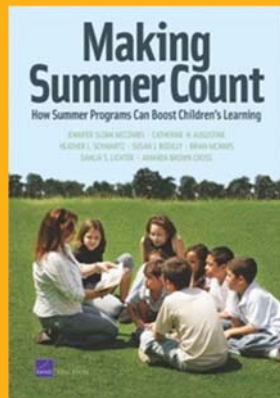
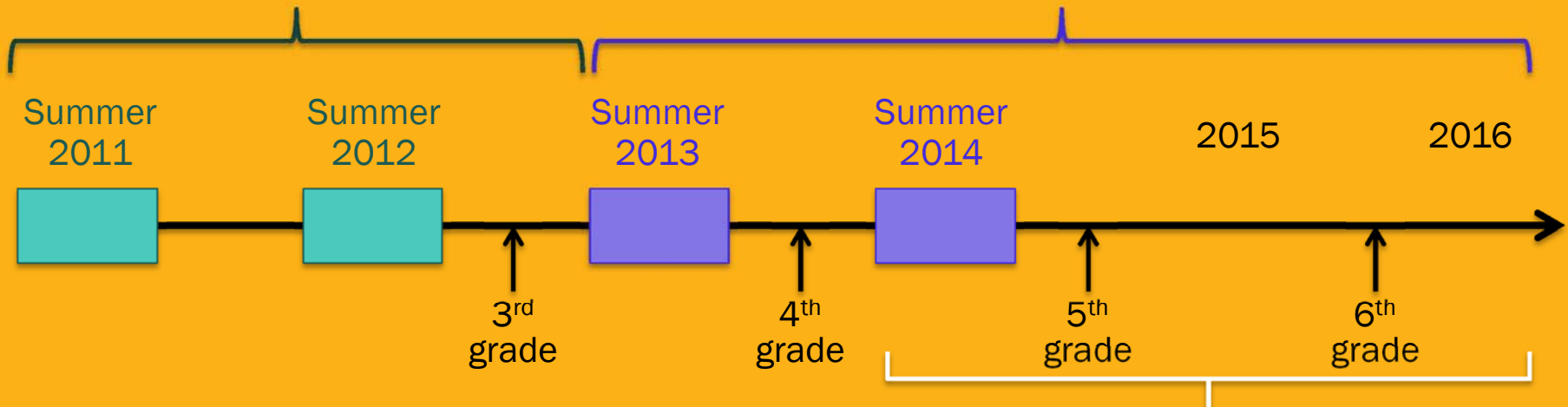
Distinctive features of The National Summer Learning Study

- National scope allows for “proof of concept”
- Follows students for two years in voluntary programs run by urban districts
- Examines academic achievement and social-emotional traits, behavior, attendance
- Collects data on program implementation

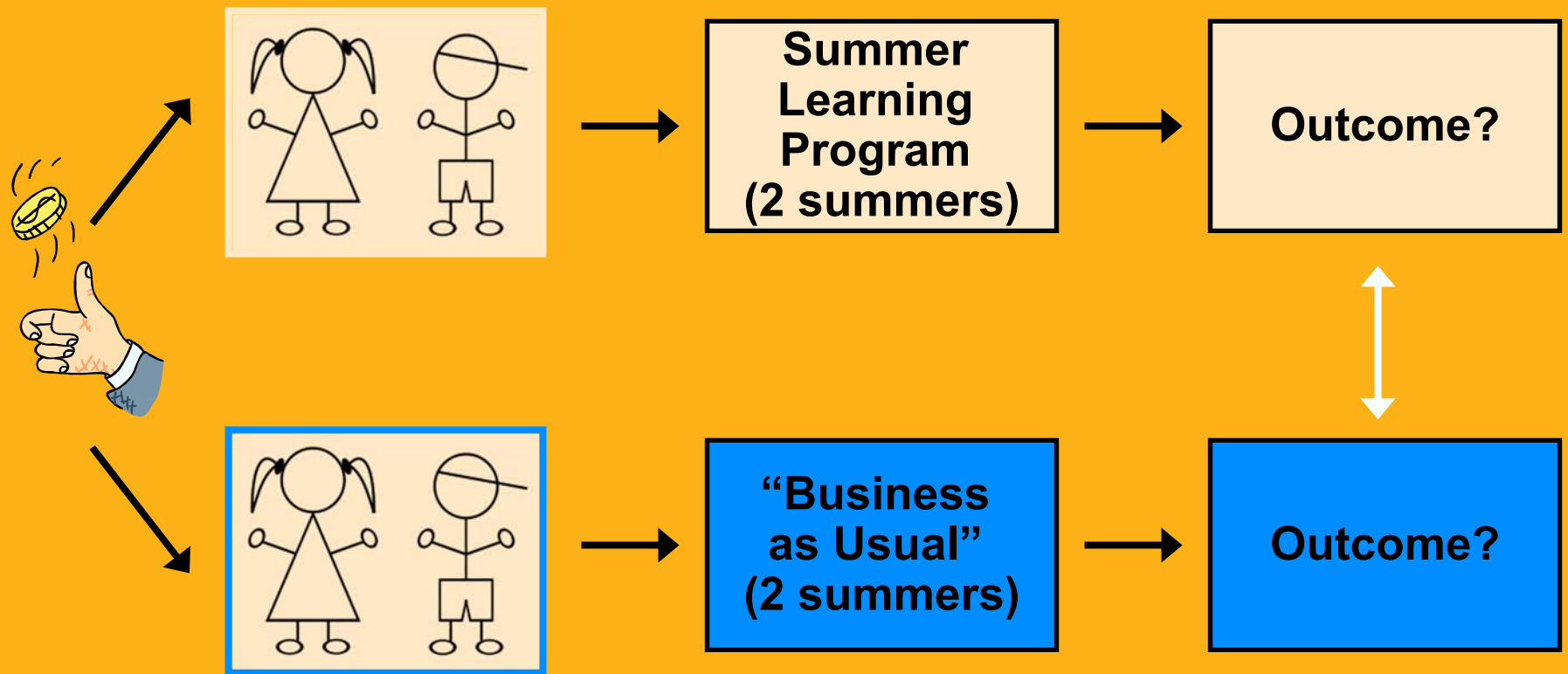
Summer learning demonstration timeline

Strengthen program
readiness

Evaluate results



Study uses strongest research design: randomized controlled trial (RCT)



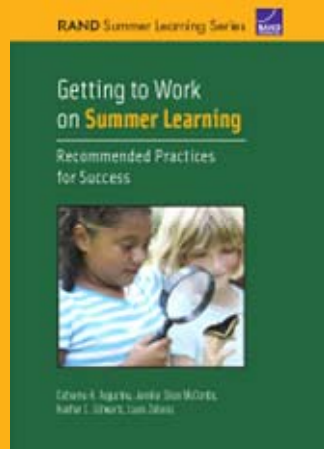
Most students in the study are low-income and non-white

Student Characteristics	Study Students
Total number of students in study	5,637
Treatment group	3,192
Control group	2,445
African American (%)	47
Hispanic (%)	40
Eligible for a free or reduced price meal (%)	89
English language learner (%)	31
Lowest achieving (%)	42
With IEPs during 2012-13SY (%)	10

Building understanding of summer learning: Schedule of public reports

Growing knowledge about summer learning

With solid evidence about program design and effectiveness, district leaders, policymakers and citizens can make better decisions about how summer learning can aid student success.



Impact of one summer of district program on Fall tests (December 2014)

Impact of one summer on school-year grades, behavior and state tests (mid-2015)

Impact of two summers of district programs (spring 2016)

How to implement high-quality summer programs (summer 2016)

2013

2014

2015

2016

What will we learn from this study?

- Can voluntary programs attract large numbers of students?
- Do summer programs positively impact student outcomes?
 - In the near-term (2013)
 - In the longer-term (2014-2017)
- What operational features appear to be effective?
- Are these programs cost effective?

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 - *Near-term student outcomes*
- Implementation analyses
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Near-term student outcomes are based on students' test results soon after the 2013 summer programs ended

- Study administered general mathematics and reading knowledge assessments during the 3rd to 5th week of school (fall 2013)
- Compared scores of treatment students to those of control students

Programs offered students summer opportunities they otherwise might not have had

- Districts exceeded their target enrollment numbers
 - Most districts recruited more third graders than they ever had in the past
- 58% of control students did not attend any kind of summer program in 2013

Treatment students performed significantly better than control students on the fall 2013 mathematics assessment

Every district contributed to this overall effect.

We present and discuss two mathematics effect sizes that address distinct policy questions

- What was the effect of offering a summer learning program?
 - “Intent to treat” effect size: 0.09
- What was the effect of the program on students who attended?
 - “Treatment on the treated” effect size: 0.11

These effect sizes indicate that participants entered school in the fall with a meaningful advantage in mathematics

- The effect sizes we identified are reasonably large
 - Particularly for a 5-6 week program
- Average effect size using similar assessments from over 80 education RCTs was 0.08
- Over one calendar year, third graders advanced in math achievement by a 0.52 effect size

Treatment students did not perform better on the fall 2013 reading test

Hypotheses for why we find no effects in reading achievement include:

- Reading comprehension is a difficult skill to improve and to measure
- Control group students may not have lost ground in reading over the summer
- Instructional quality may not be sufficient

In addition to the primary focus on academic assessment performance, we are examining additional impacts

- Social-emotional competencies, measured in fall 2013
 - Treatment students did not perform better than control students on our measure
- Now analyzing 2013-14 school year data
 - Behavior, attendance, grades
 - Will report these findings next summer

Neither academic nor social-emotional outcomes varied by student demographics

- Race
- English language learner status
- Family income
- Prior achievement

We collected implementation data to shed light on the “black box”

- RCTs are often criticized for telling practitioners whether or not something worked, but not why or why not
- We collected implementation data on several aspects of the 2013 programs
 - 207 academic teacher surveys
 - Observations of 215 language arts and 182 mathematics blocks

We examined whether features of the programs were related to student outcomes

- Features: attendance, hours of instruction, instructional quality, site orderliness, opportunity for instruction, appropriateness of curriculum
- These analyses are correlational and do not demonstrate that the feature causes outcomes

Attendance and dosage were related to higher treatment effects in mathematics

- Students who attended at least 22 days had largest treatment effects
- As did students who received at least 26 hours of instruction

Aspects of quality were positively correlated with reading outcomes

- Teachers who had taught 3rd or 4th grade in prior school year
- Higher-quality language arts instruction
- Orderly summer sites

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Summary of Findings

- The programs provided opportunities that likely would not have existed otherwise
- A large number of students signed up for the voluntary summer programs

Summary of Findings Based on RCT

- Students in the summer learning programs had a meaningful mathematics achievement advantage over control group students in the fall
- This was not the case for reading achievement or social-emotional development

Summary of Findings Based on Correlations

- Strong attendance and dosage provided an even greater boost in mathematics
- Teacher qualifications, instructional quality, and site orderliness were also related to improved reading outcomes

Recommendations Based on Correlations

- Design programs to span 5-6 weeks, with 60-90 minutes per day for math
- Promote consistent attendance and adhering to schedules
- Attract “effective” teachers with relevant grade-level experience
- Provide coaching and PD on instructional quality
- Maintain positive student behavior

Next Steps

- In 2015, we will know how students performed during the school year and on the 2014 state assessments after one summer of programming
- In 2016, we will have information on the impact of two years of programming, the cost effectiveness of summer learning programs, and more on the components of effective summer learning programs



Based on the 2013 state assessments, districts served students with a range of ability levels in reading ...

District	Level 1 (%)	Level 2 (%)	Level 3 (%)	Level 4 (%)	Level 5 (%)
Boston	14	56	27	2	NA
Dallas*	24	57	19	NA	NA
Duval	0	50	26	19	5
Pittsburgh	37	16	39	8	NA
Rochester	73	21	5	0	NA

*Dallas levels: Level 1 = “Unsatisfactory,” Level 2 = “Satisfactory,” Level 3 = “Advanced”

... and in mathematics

District	Level 1 (%)	Level 2 (%)	Level 3 (%)	Level 4 (%)	Level 5 (%)
Boston	19	33	34	14	NA
Dallas*	35	55	10	NA	NA
Duval	12	31	37	15	5
Pittsburgh	17	27	37	20	NA
Rochester	69	24	5	1	NA

*Dallas levels: Level 1 = “Unsatisfactory,” Level 2 = “Satisfactory,” Level 3 = “Advanced”

Most treatment students attended fewer than 22 days

- Average days students attended within districts ranged from 11 to 17 across the districts
- Proportion of students within districts attending at least 22 days ranged from 23% - 55%

Most treatment students received fewer than 26 hours of mathematics

- Average hours of math instruction received ranged from 15 to 21 across the districts
- Proportions of students within the districts receiving at least 26 hours of instruction ranged from 0 to 53%

In 2013, 64% of students had a language arts teacher who had just taught 3rd or 4th grade in the prior school year

Across the districts, the proportion of students taught by a language arts teachers having just taught 3rd or 4th grade ranged from 31%-71%

Language arts instructional quality varied across classrooms

- Language arts quality scale scores ranged from 3 to 7 on a 10-point scale

Site orderliness scale: What concepts are we measuring?

Teachers' perceptions of:

- Bullying and fighting
- Consistent and effective site-level discipline procedures
- Wasted learning time due to student misbehavior

Some districts did not have any sites that fell into the “most orderly” category – others had many

Quality language arts instruction: What concepts are we measuring?

- Informal formative assessment and responsive re-teaching
- Instructional clarity and accuracy
- Teacher enthusiasm, engagement
- Student enthusiasm and focus
- Classroom management
- Use of classroom time for instruction

Not capturing rigor, problem-solving, critical thinking, or other important aspects of instructional quality