Descriptive Analytics of Summer Readiness Courses

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September 2020

Overview

Summer Readiness Courses: Overview

- Four classes
  - High school math readiness
  - High school ELA readiness
  - College math readiness
  - College ELA readiness

- Courses were open to all rising 9th, 12th, and 13th graders in the state
  - 2,078 unique students initially enrolled in the courses
  - As of August 4th, 1,686 students remain enrolled

Goals

1. Evaluate effectiveness of summer programs

2. Inform a broader expansion of these courses in the 2020-2021 academic year

Data Sources

- Focus of this presentation
  - Student demographics
  - Student school/LEA assignment
  - Student pre-course assessments (SAT/PSAT and RICAS)
  - Student survey responses
  - Teacher demographics & years of experience

- Future analyses
  - Data on course engagement
  - Teacher-course-student linking data

Research Questions

1. Who are we serving?

2. What teachers are participating?

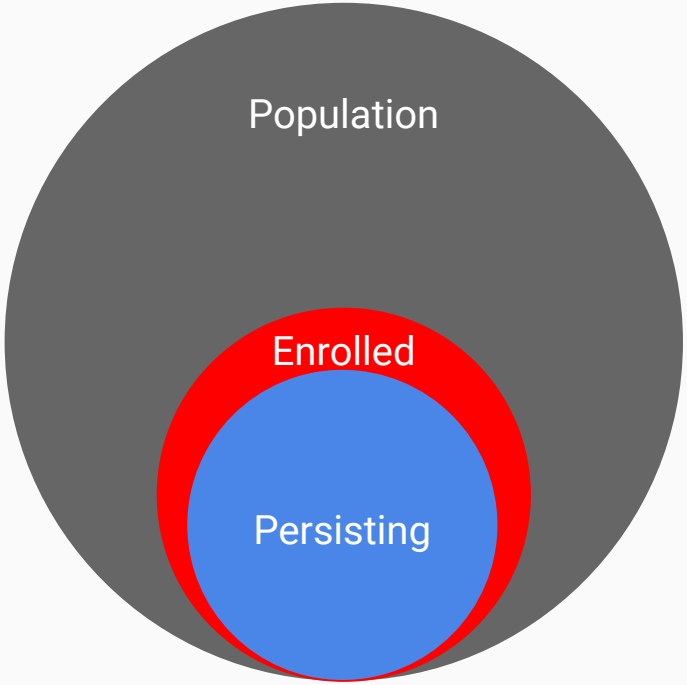
3. How does student engagement and participation vary?

4. Equity: are we serving our priority students? What methods of outreach worked best? What were major barriers to engagement?

Student Sample

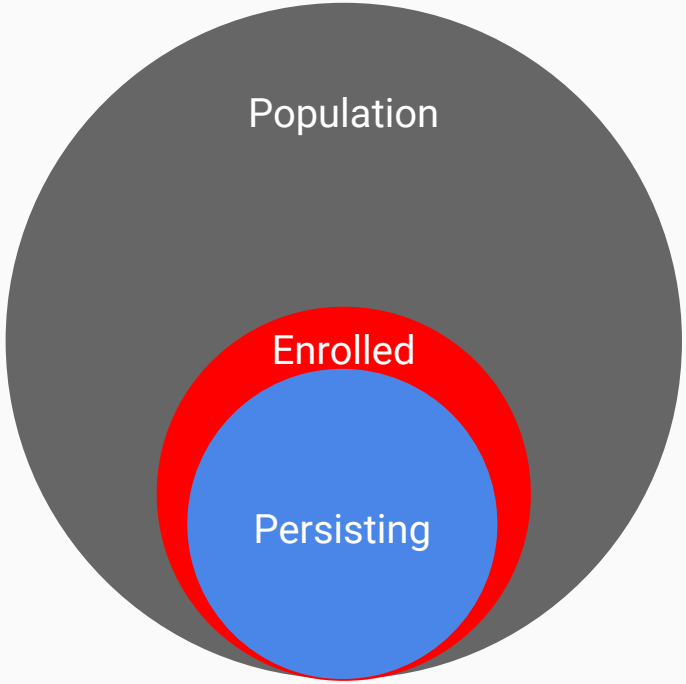
Key Samples

- We compare across three groups:
  1. **POPULATION**: the full sample of all students that were eligible to register for the course -- all rising 9th, 12th, and 13th graders
  2. **ENROLLED SAMPLE**: every student who ever enrolled in a course
  3. **PERSISTING SAMPLE**: every student who remained enrolled in courses as of early August



Defining “Persisting”

- To define “**persisting**,” we remove students who:
  - Explicitly email us that they are dropping the course
  - *Never* engaged with the course and never were in contact with their teacher



Key Numbers

	Population (All Rising 9th/12th/13th)	**Enrolled Sample** (Ever Enrolled)	**Persisting Sample** (Still Enrolled)
9th Math		509	439
9th ELA	*11,788*	351	285
9th Both		358	270
12th Math		378	284
12th ELA	*23,234*	304	280
12th Both		178	128
Total	35,022	2,078	1,686

Key Numbers

	Population (All Rising 9th/12th/13th)	**Enrolled Sample** (Ever Enrolled)	**Persisting Sample** (Still Enrolled)
Total	35,022	2,078	1,686

- We focus on these three overall samples

- Numbers in future slides vary slightly because 160 enrolled students are not in our population sample
  - Likely causes: inability to match to SASID (bad name/birthday data), enrolled in different grades, new to RIDE schools, private/home schooled, etc.

Notes on Numbers

	Population (All Rising 9th/12th/13th)	**Enrolled Sample** (Ever Enrolled)	**Persisting Sample** (Still Enrolled)
Total	35,022	2,078	1,686

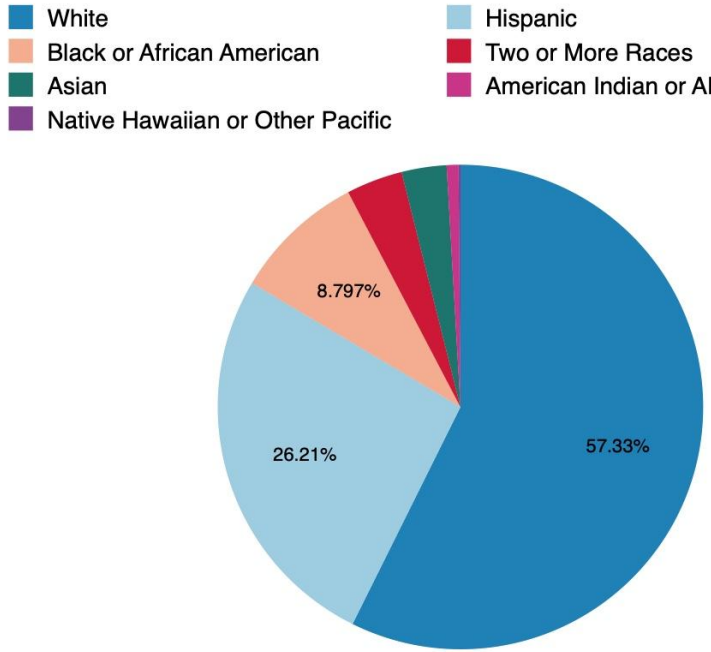
- Numbers are quite high!
  - 6% of all eligible students enrolled
  - Over 10% of all rising 9th graders in the state enrolled
  - An enrollment of 1,686 is roughly equivalent to a mid-sized Rhode Island LEA (Newport, Middletown, Tiverton, North Smithfield) -- but we're only teaching two grades!
- Roughly a quarter of participating students enrolled in both the reading and math courses

Questions on Sample

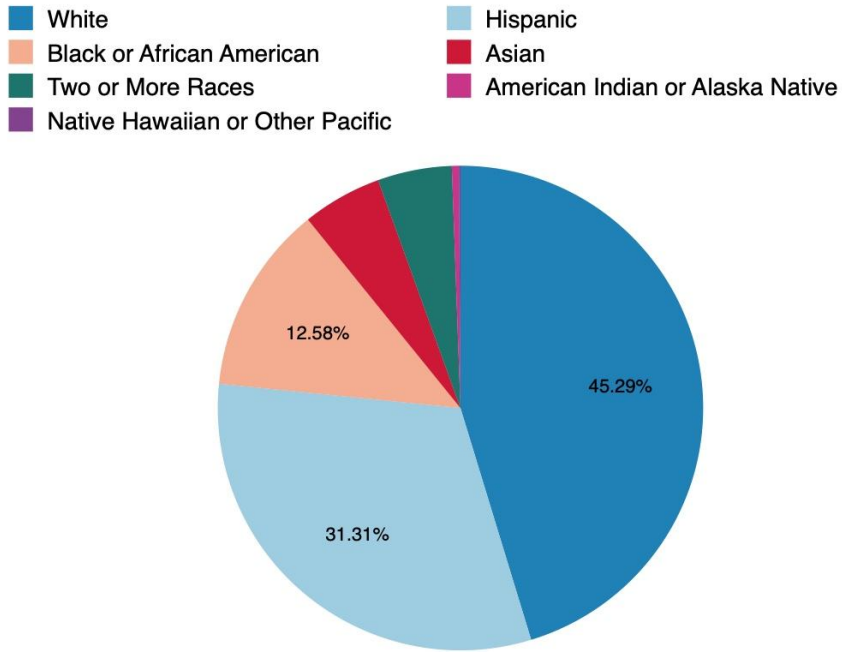
- Who is enrolling?
- Who is persisting/dropping out?

- To answer these questions, we compare demographics of our 3 key samples

Demographics: Race/Ethnicity

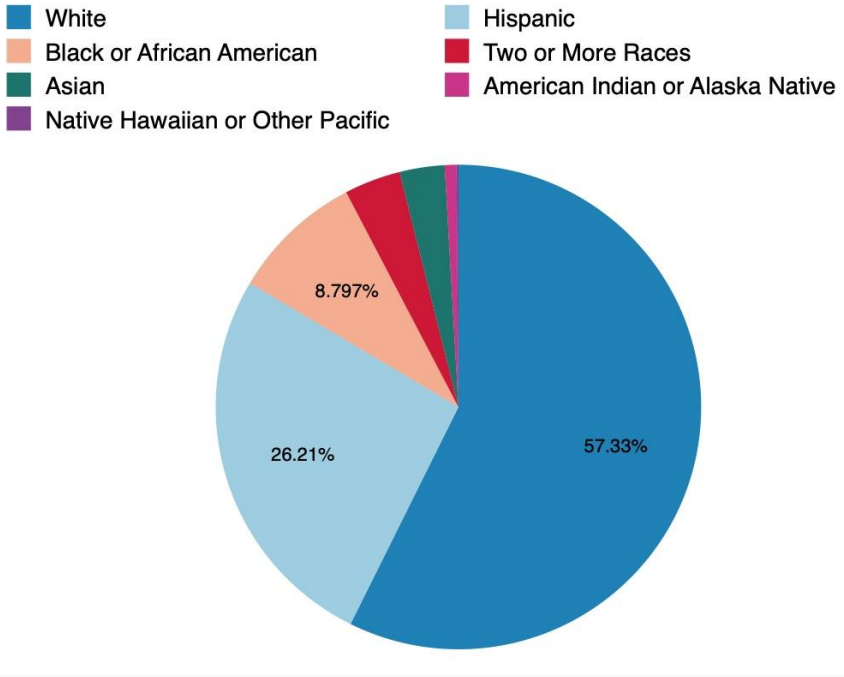


Population
(All Rising 9th/12th/13th)



Enrolled Sample
(Ever Enrolled)

Demographics: Race/Ethnicity



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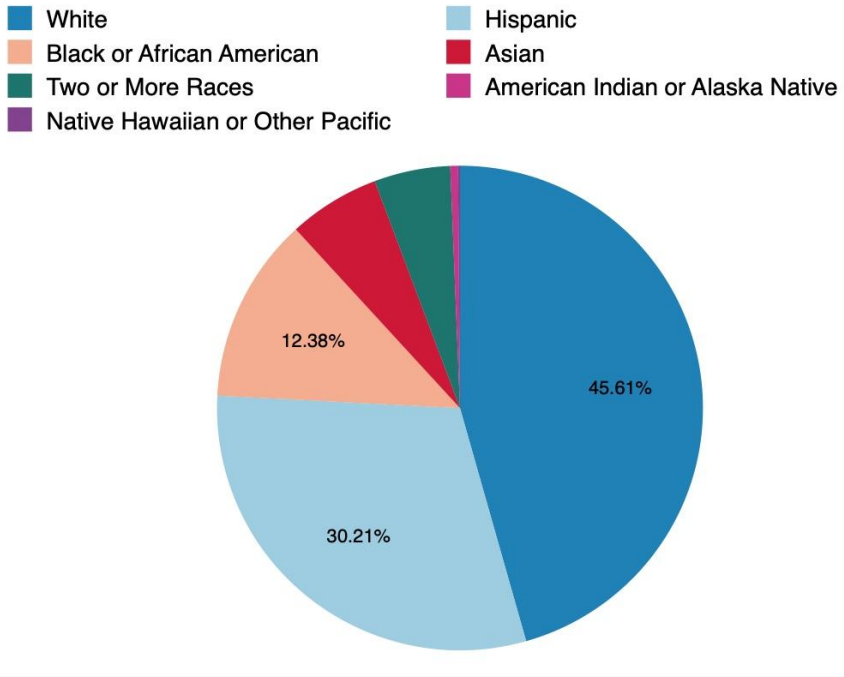
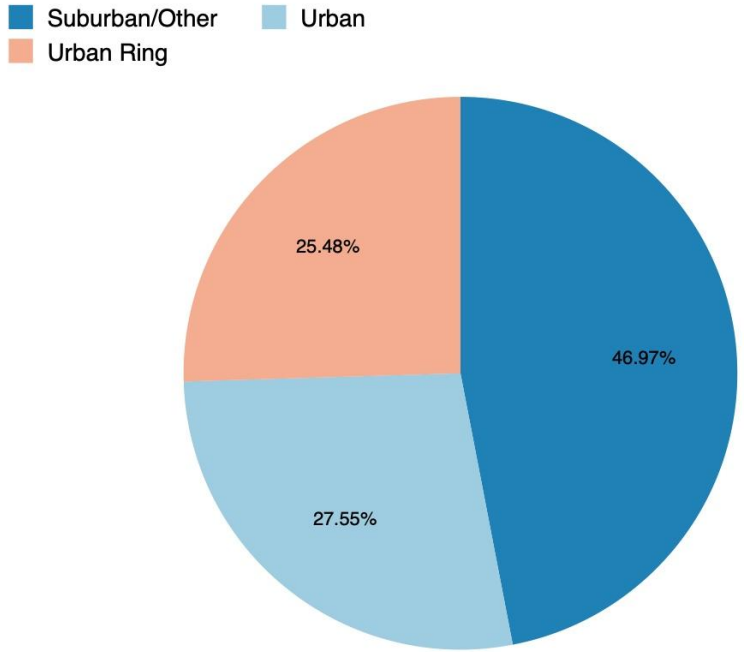


Persisting Sample
(Still Enrolled)

Demographics: District Locale



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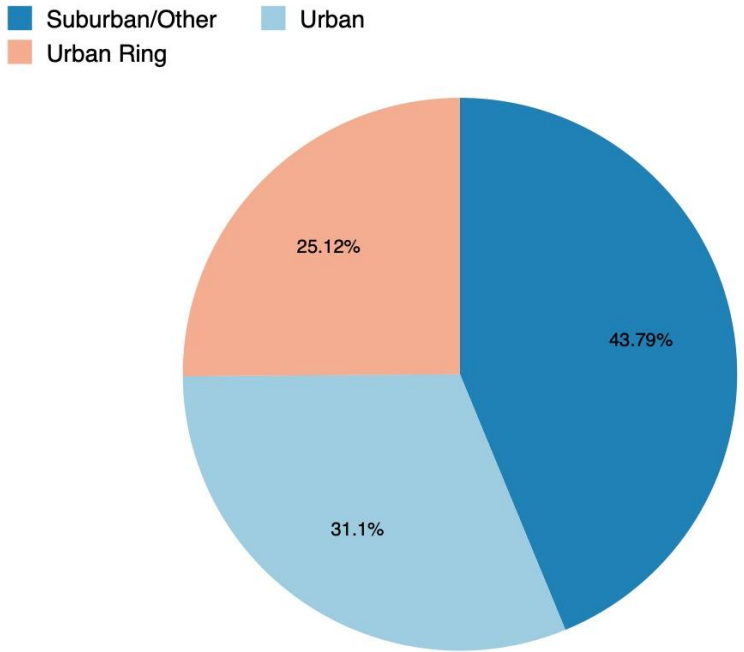

Enrolled Sample
(Ever Enrolled)

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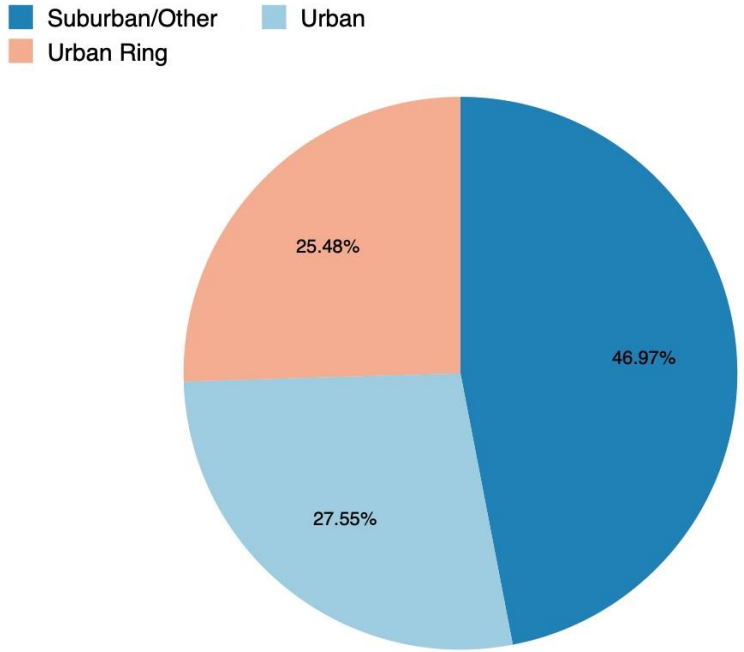

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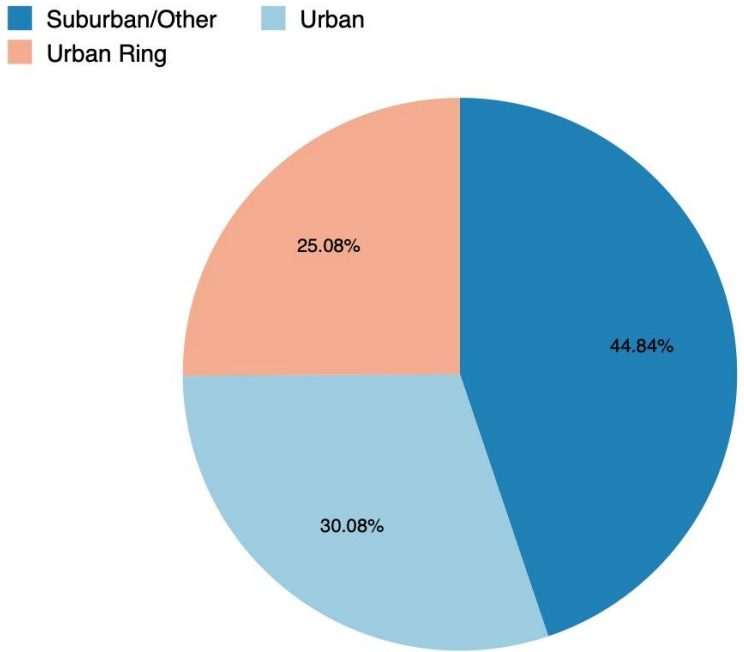
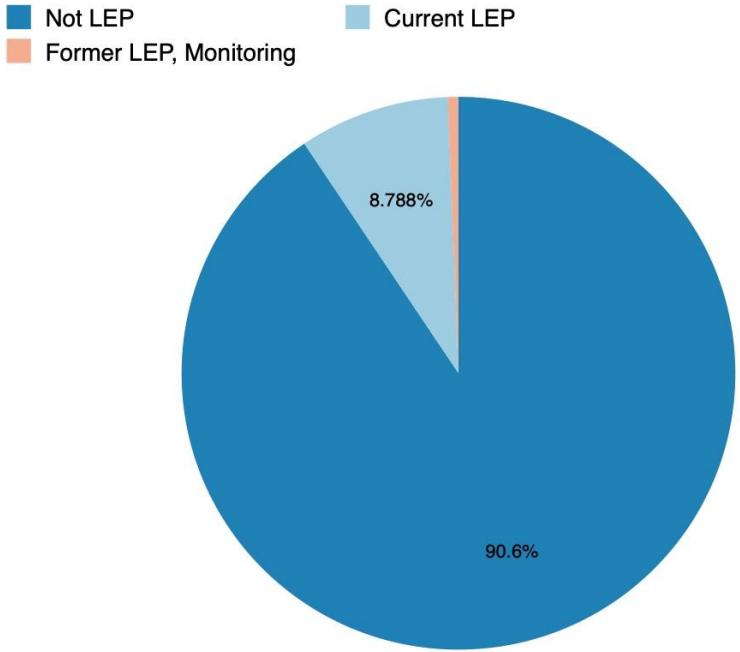
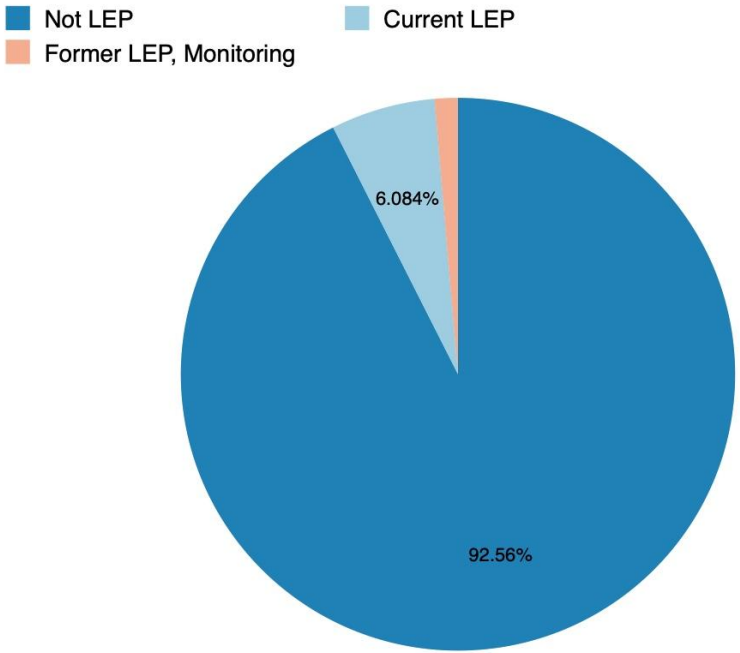


Persisting Sample
(Still Enrolled)

Demographics: LEP

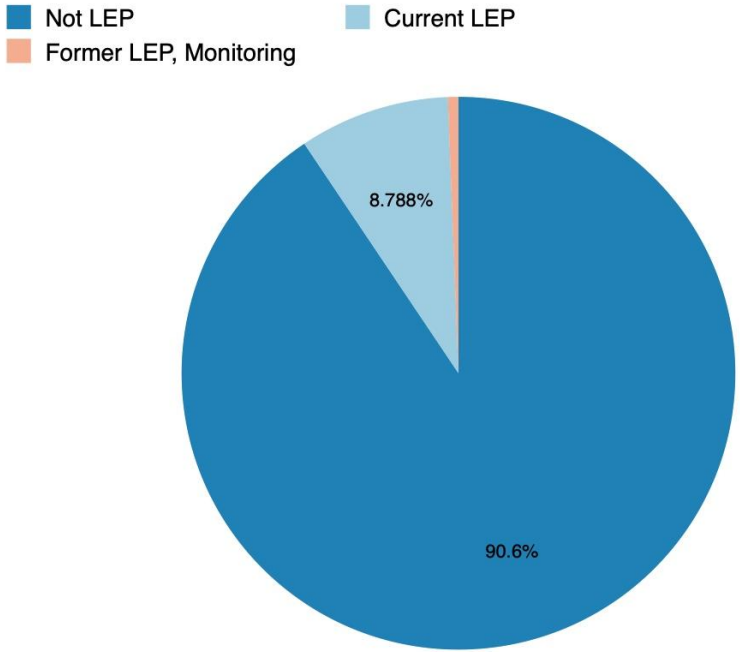


Population
(All Rising 9th/12th/13th)



Enrolled Sample
(Ever Enrolled)

Demographics: LEP



Population
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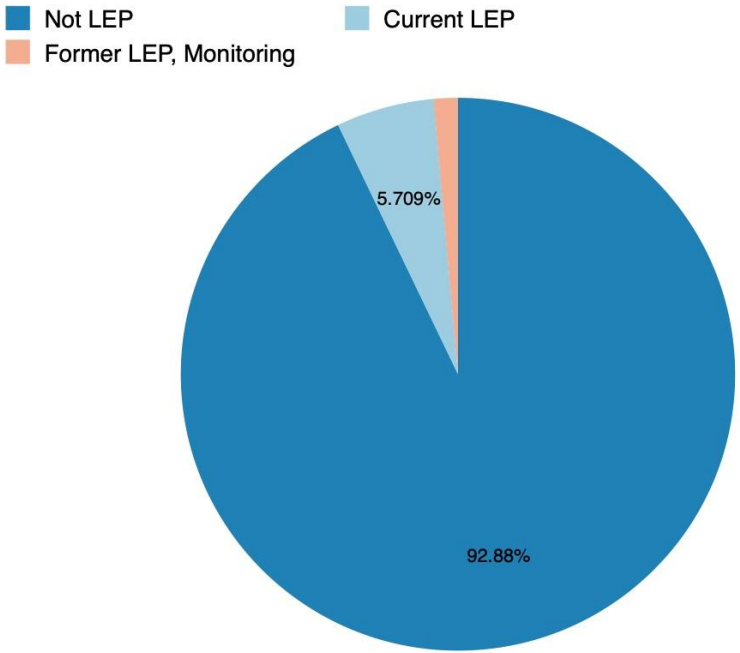


Persisting Sample
(Still Enrolled)

Takeaways

- **Overall, enrolled students are broadly representative of the broader population of eligible students**

- Students that persisted are similar to all students that ever enrolled
  - **In other words, the students that dropped the course are not disproportionately coming from specific demographics or locations**

Student Pre-Course Assessments

Data Overview

- PSAT and SAT scores for spring 2018 and 2019 administrations
  - Total scores, performance levels, benchmarks, subscores

- RICAS scores for 2018 and 2019
  - Total scores, performance levels, growth, subscores

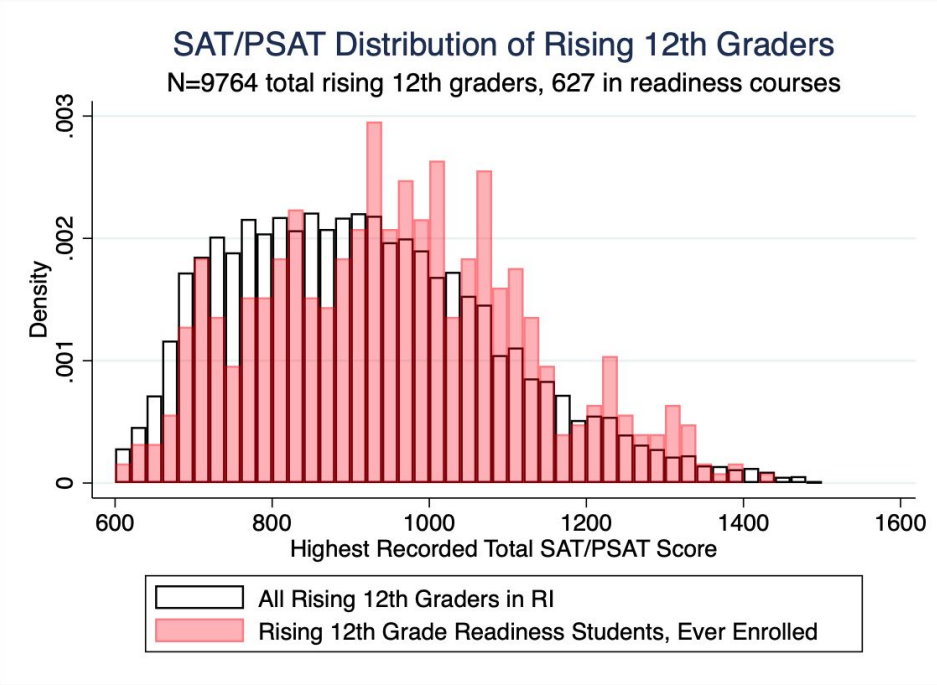
PSAT & SAT: What tests are we using?

- Students take the PSAT in 10th grade and SAT in 11th grade
- No tests were given in Spring 2020 due to pandemic

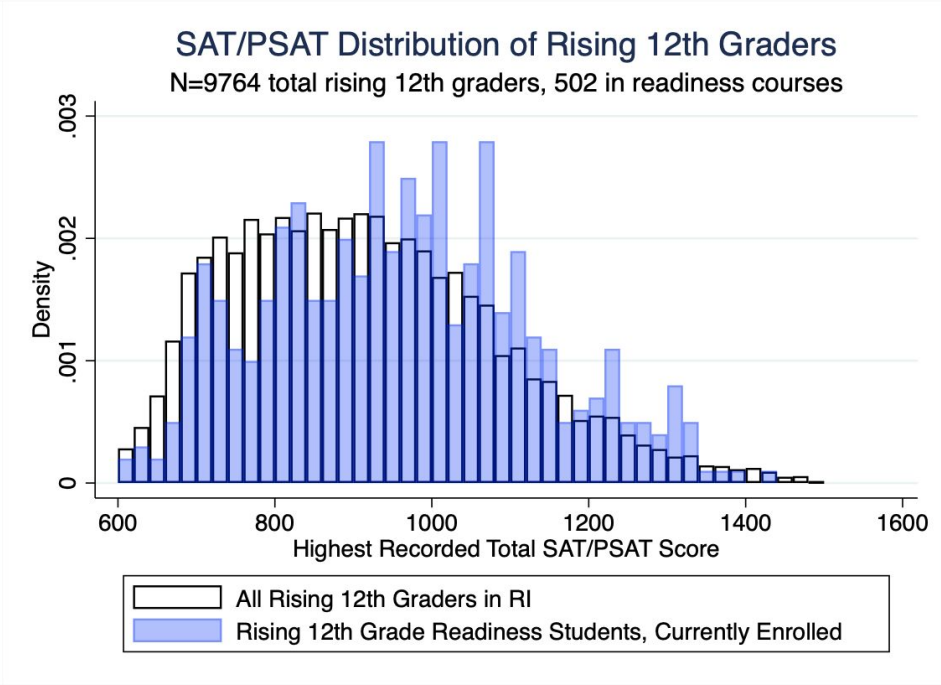
2017-18	2018-19	2019-2020	2020-2021
10th Grade	11th Grade	12th Grade	13th Grade
	10th Grade	11th Grade	12th Grade

- For all rising 12th and 13th graders, we focus on their highest total PSAT or SAT score
  - For rising 13th graders, we have 10th grade PSAT and 11th grade SAT
  - For rising 12th graders, we only have 10th grade PSAT

PSAT & SAT: 12th Graders

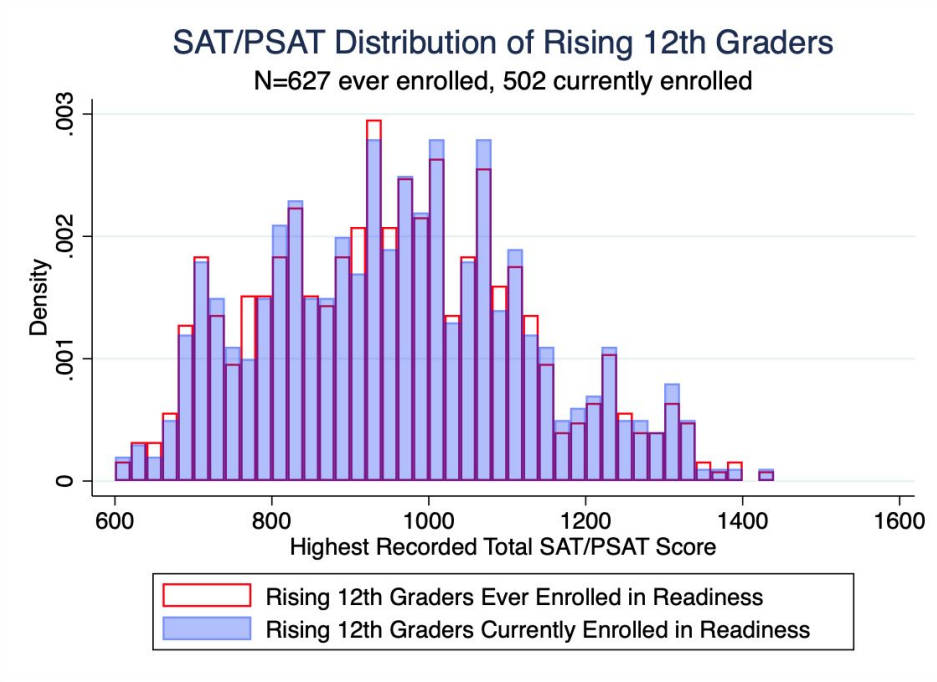


All 12th Graders vs **Ever Enrolled 12th Graders**



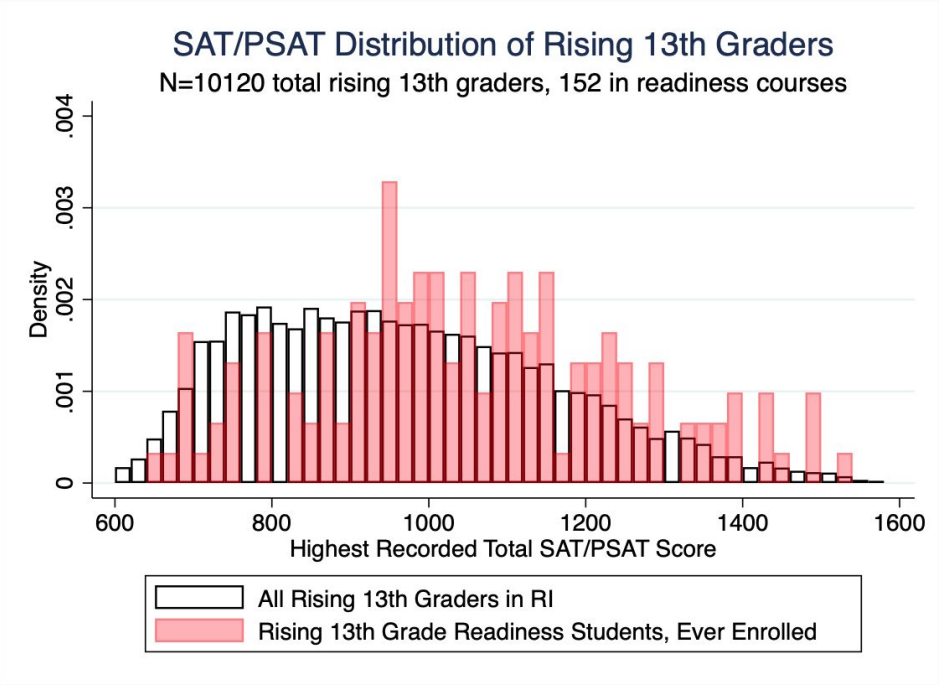
All 12th Graders vs **Persisting 12th Graders**

PSAT & SAT: 12th Graders

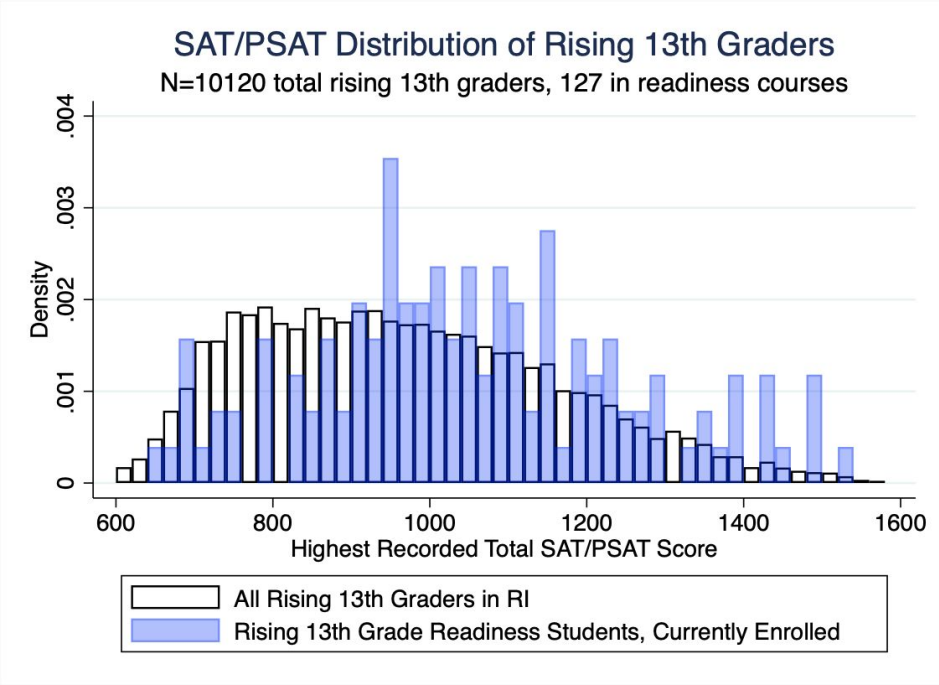


Ever vs **Persisting Enrolled 12th Graders**

PSAT & SAT: 13th Graders

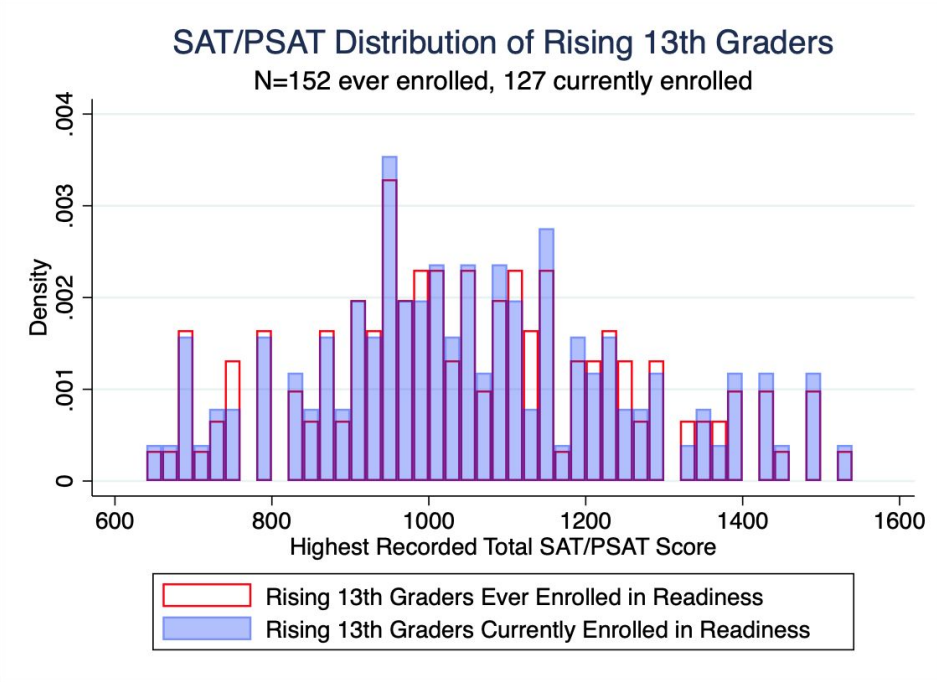


All 13th Graders vs **Ever Enrolled 13th Graders**



All 13th Graders vs **Persisting 13th Graders**

PSAT & SAT: 13th Graders



Ever vs **Persisting Enrolled 13th Graders**

PSAT & SAT: Takeaways

- **Distribution of scores of enrolled students is roughly similar to entire population**
  - Enrolled students are somewhat more likely to have higher scores

- **Students that persisted are similar to students that ever enrolled**
  - The students that dropped were not among the highest- or lowest-performing students

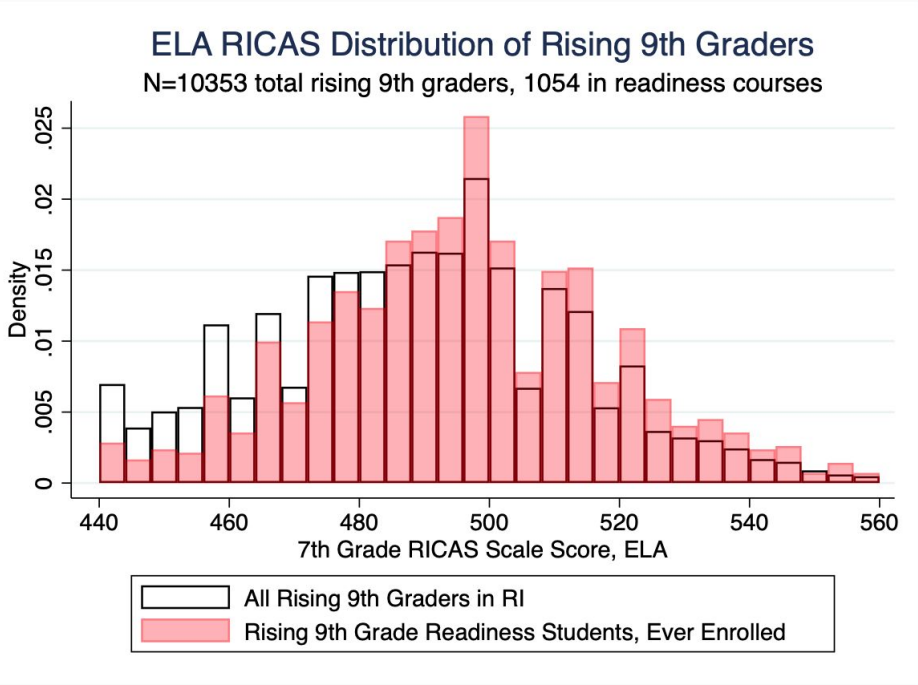
RICAS: What tests are we using?

- Students take the ELA and Math RICAS annually in grades 3-8
- No tests were given in Spring 2020 due to pandemic

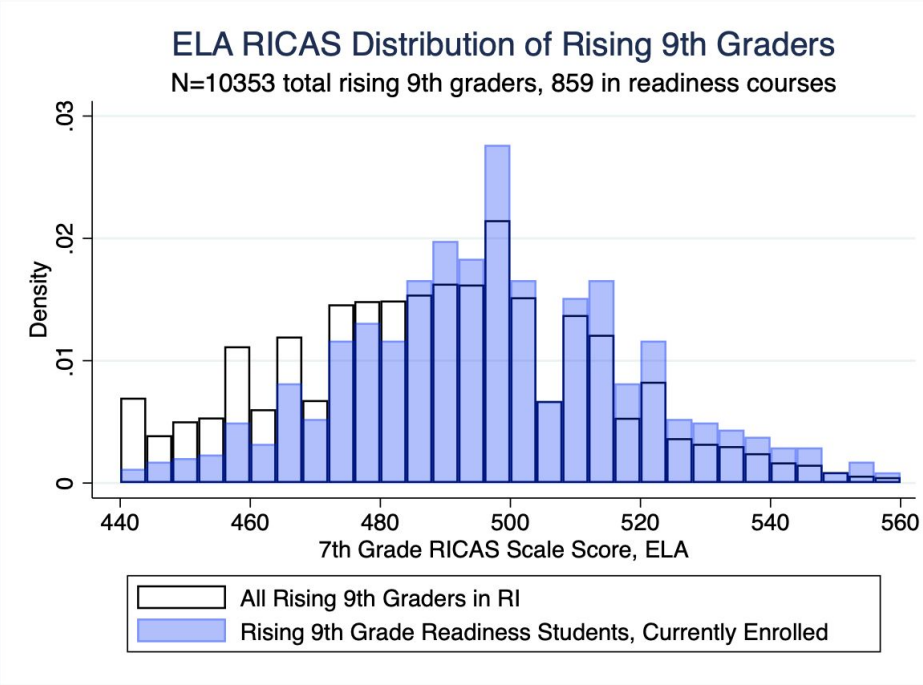
2017-18	2018-19	2019-2020	2020-2021
6th Grade	7th Grade	8th Grade	9th Grade

- For all rising 9th graders, we focus on their 7th grade RICAS score

RICAS: ELA

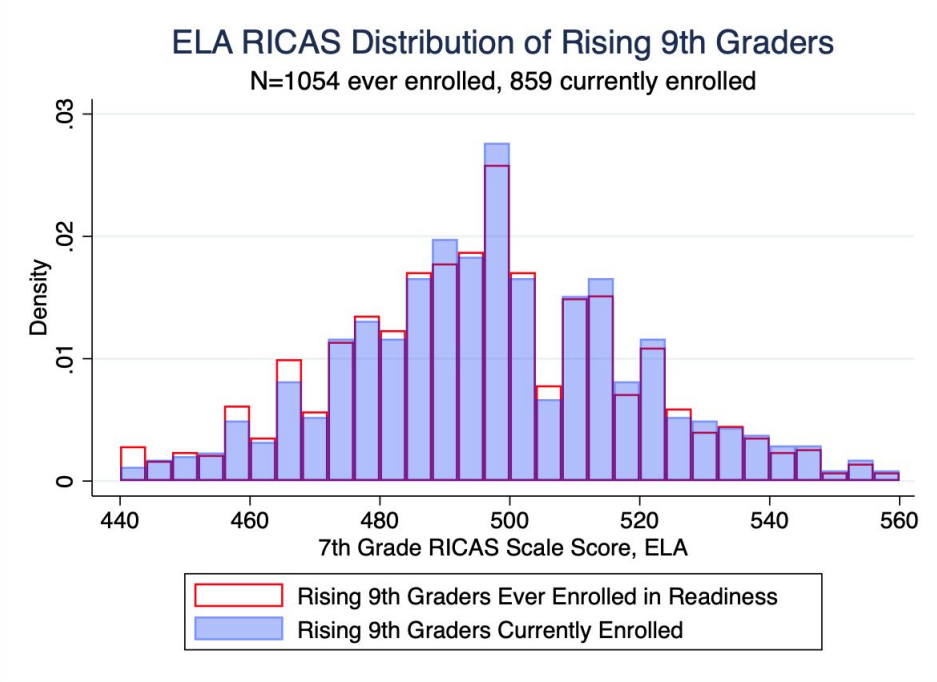


All 9th Graders vs **Ever Enrolled 9th Graders**



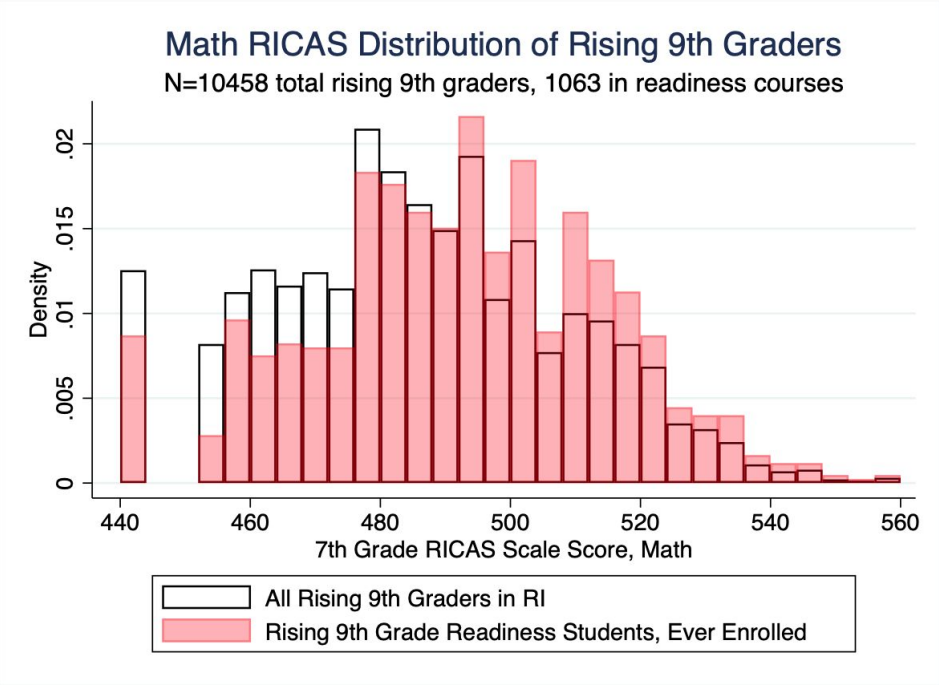
All 9th Graders vs **Persisting 9th Graders**

RICAS: ELA

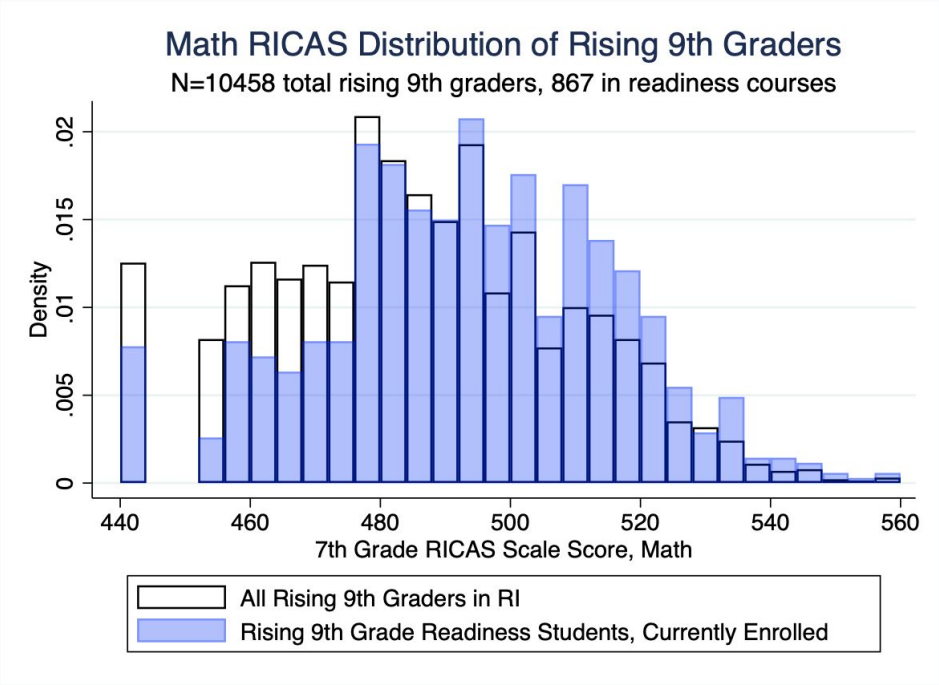


Ever vs **Persisting Enrolled 9th Graders**

RICAS: Math

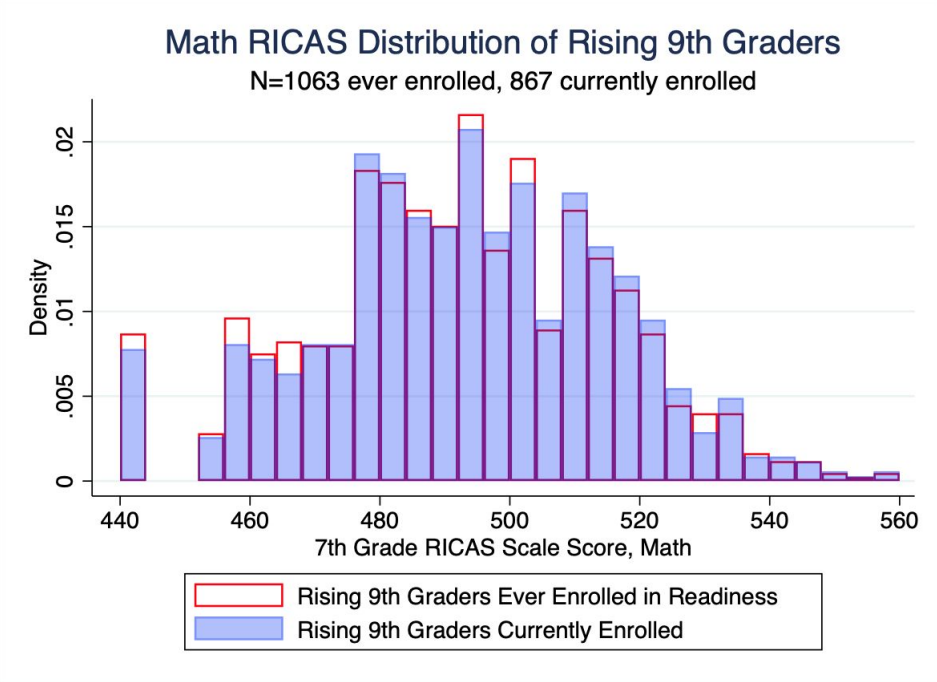


All 9th Graders vs **Ever Enrolled 9th Graders**



All 9th Graders vs **Persisting 9th Graders**

RICAS: Math



Ever vs **Persisting Enrolled 9th Graders**

RICAS: Takeaways

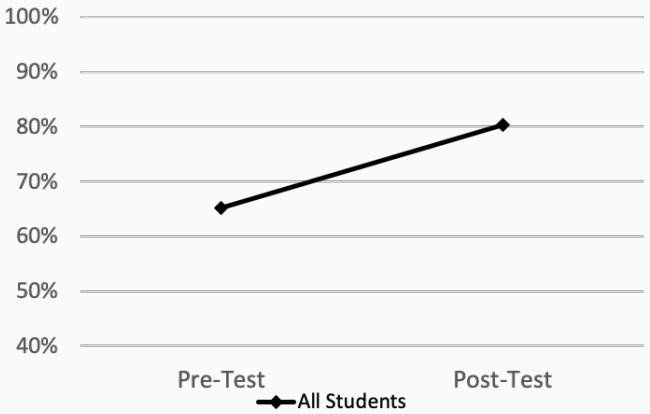
- **The distribution of scores of enrolled students is roughly similar to the entire population, but enrolled students are more likely to have higher scores**

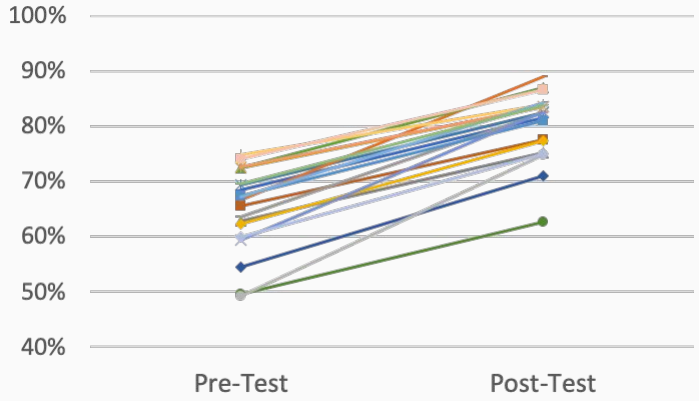
- **9th graders that persisted are extremely similar to 9th graders that ever enrolled**
  - The students that dropped were not disproportionately among the highest- or lowest-performing students

Student Outcomes

High School Math

- Students in the high school math class took an algebra diagnostic test at the beginning and end of the course.
  - **Overall, students that took both the pre- and post-test increased their score by an average of 15 percentage points**

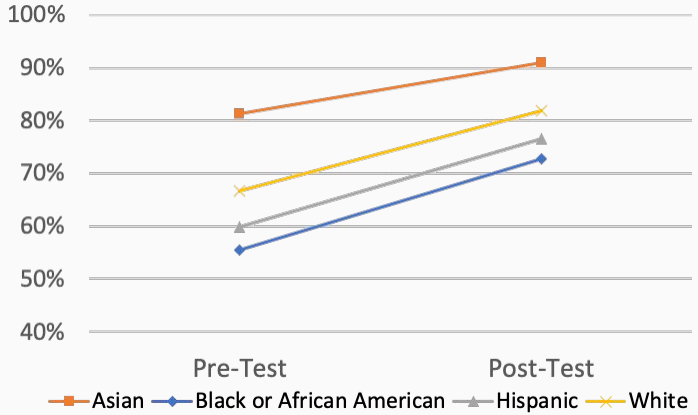


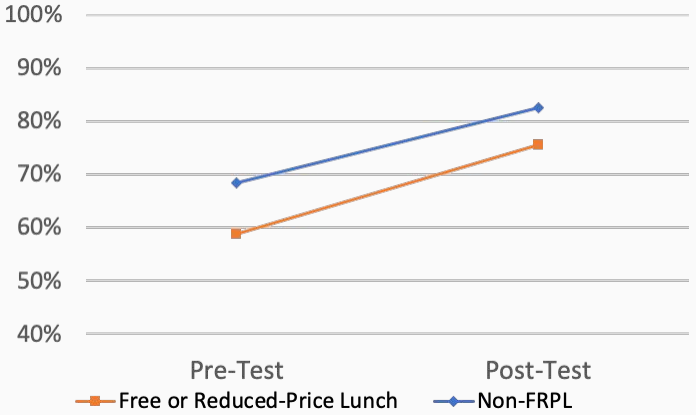


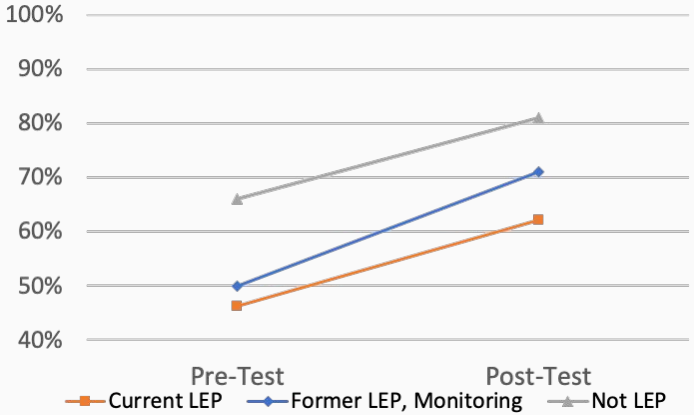
- **Average scores improved across all 20 teachers' sections**

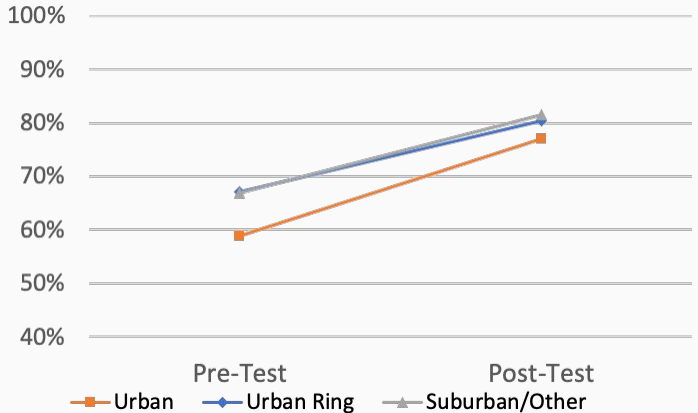
High School Math: Disaggregated

- **All subgroups of students improved their algebra score, on average.**









College Readiness Math

1. Of the 141 students taking both exams, 112 (79%) improved and had a higher score on the post test, and 29 had a lower score. Anecdotally, most of the decreases were either very comparable scores (drop of a point or two), or timed out exams (students didn't complete all problems, resulting in much lower scores).

2. Overall scores improved by about 5.5 points on the exam, which is half of a standard deviation, so is significant. (The scoring scale is the same as the SATs, so this can be understood as comparable to a student's math SAT going up by an average of 55 points.)

3. Most of the score increase was among students whose initial score was below average. Among below average initial scores, scores improved by 10.75 points, which is over a full standard deviation (comparable to over 100 point increase in math SAT score). To my understanding, this group with lower skills coming in is more of the target group, so this is very promising.

4. An estimate 35 of the 141 of them would have actually improved their initial course placement at URI as a result.

5. Looking at just the post tests, 81 of the 141 would place into Precalculus or Calculus at URI. This is a good situation; though starting in calculus is desirable for many programs at URI, they typically are not too worried with starting in precalc, one course behind. We can make that up somewhere. Needing algebra, two courses behind, is more troubling, and completion rates suffer.

Unit and Node Access & Mastery

All data reported below represent student activity during asynchronous sessions. We report RealizeIt utilization data for 1,633 students, representing 2,056 course records across math and reading. The RealizeIt platform segments course content into units and nodes. Units loosely correspond to unit plans and represent areas of learning. One unit can be viewed as a module, or a grouping of smaller lessons. Nodes represent specific learning activities. Nodes are smaller than units, with multiple nodes comprising one unit. In table 4, we report the percentage of units and nodes accessed by students in the high school and college readiness courses. Students across the courses accessed between 61–70 percent of the unit material, on average. This means that students accessed about two thirds of the course content during asynchronous class time. The 9th grade students accessed more units, on average, than did 12th graders. Ninth grade students in math and reading accessed 70 percent of the units offered. The 12th grade reading and math courses averaged 61 percent and 65 percent, respectively.

Course	Number of Possible Units	Average Percentage of Units Accessed	Number of Possible Nodes	Average Percentage of Nodes Accessed
9th Grade HS Readiness Math	8	70%	75	60%
9th Grade HS Readiness Reading	8	70%	44	64%
12th Grade College Readiness Math	16	61%	50	56%
12th Grade College Readiness Reading	8	65%	38	59%

Student Surveys

Additional survey analysis conducted by Coral Flanagan

Two Related Student Surveys

(1) **Survey to enrolled students**

- Asks about motivation for taking course, course difficulty, level of engagement, and limitations of course.

- Sent to 1697 students on 7/29
  - 442 responses
  - **26% response rate**

(2) **Survey to dropped students**

- Asks why they dropped the course

- Sent to 397 students on 8/11
  - 39 responses
  - **10% response rate**

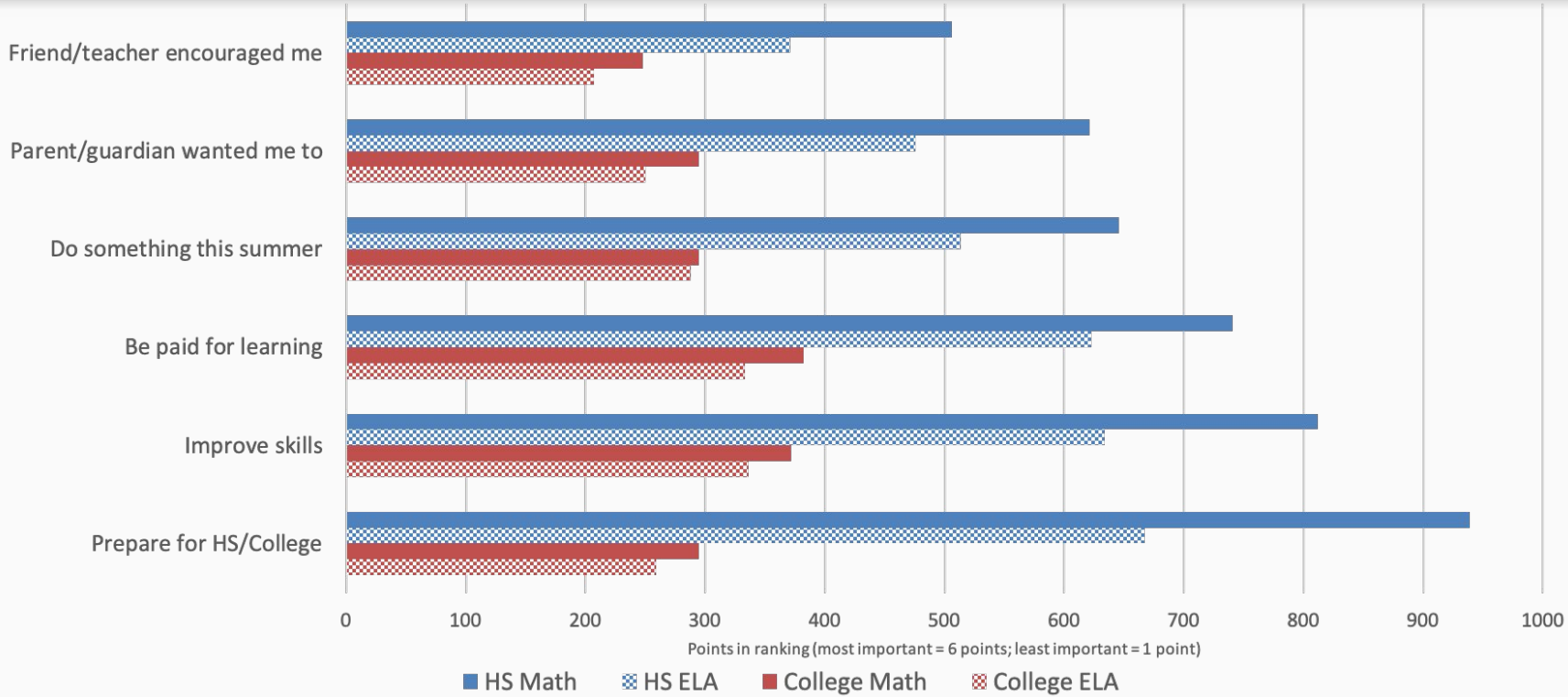
Enrolled Survey Overview

- Who took the survey?
  - 442 of 1697 enrolled students (26% response rate)
  - 68% 9th graders
  - 32% 12th graders

- 26% of respondents were enrolled in both a math and ELA course

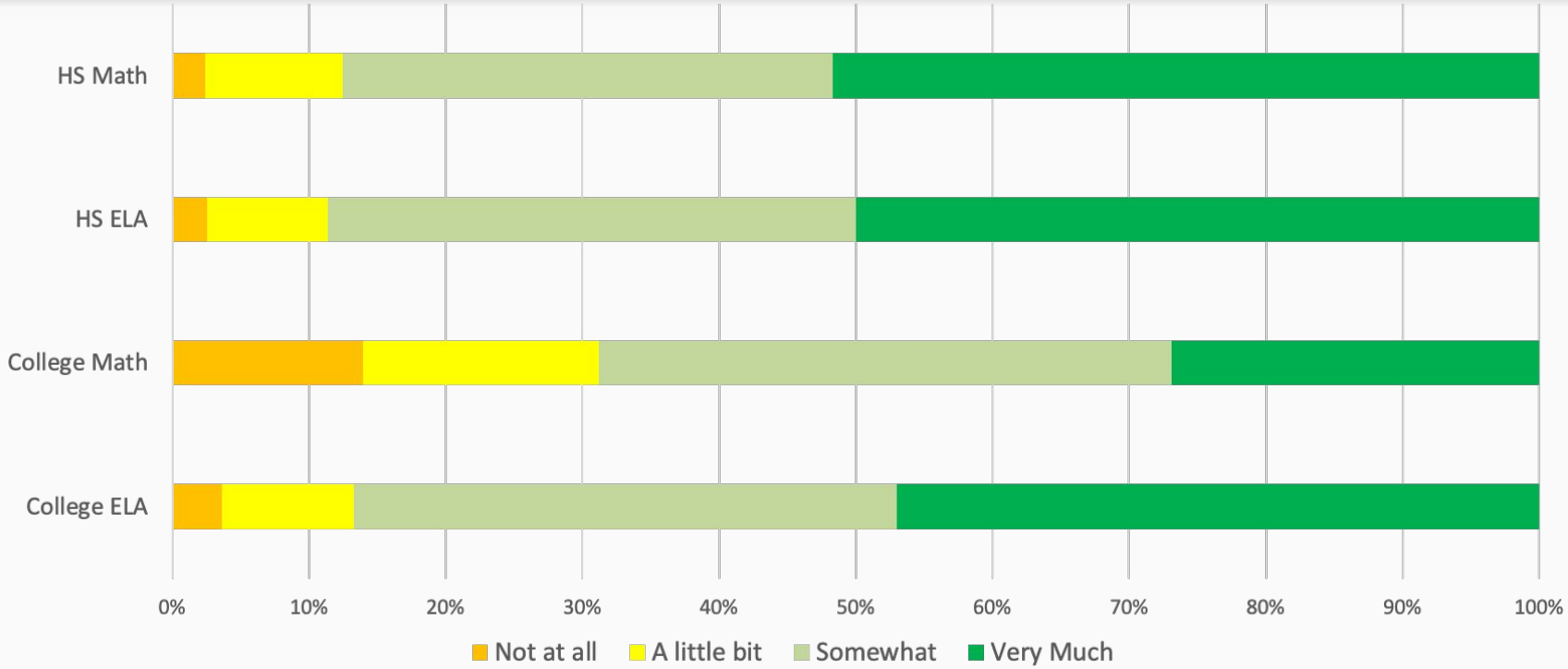
- **Note that this is likely not a representative sample of enrolled students**

Motivations for taking the course



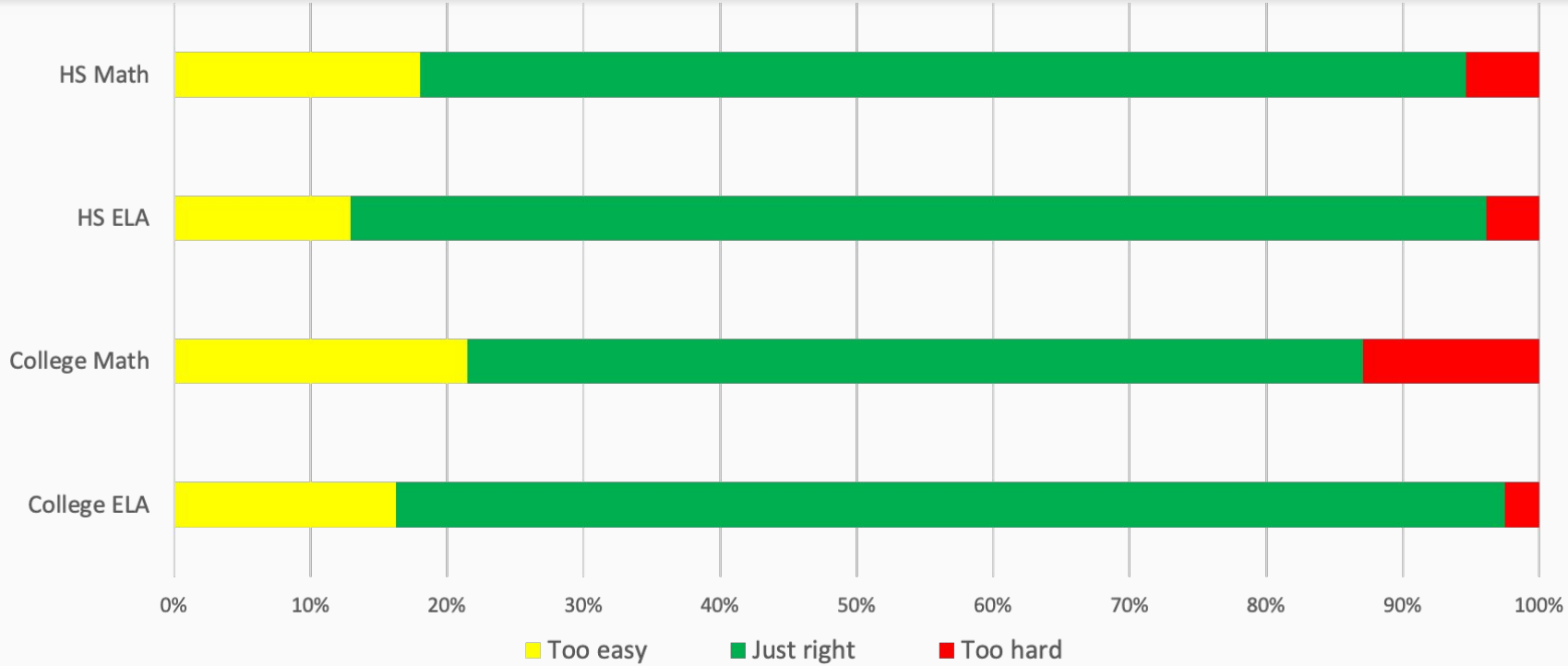
- High school students ranked preparing for high school as the number one reason for enrolling
- College students were most motivated by payment and improving academic skills

Course Meeting Expectations



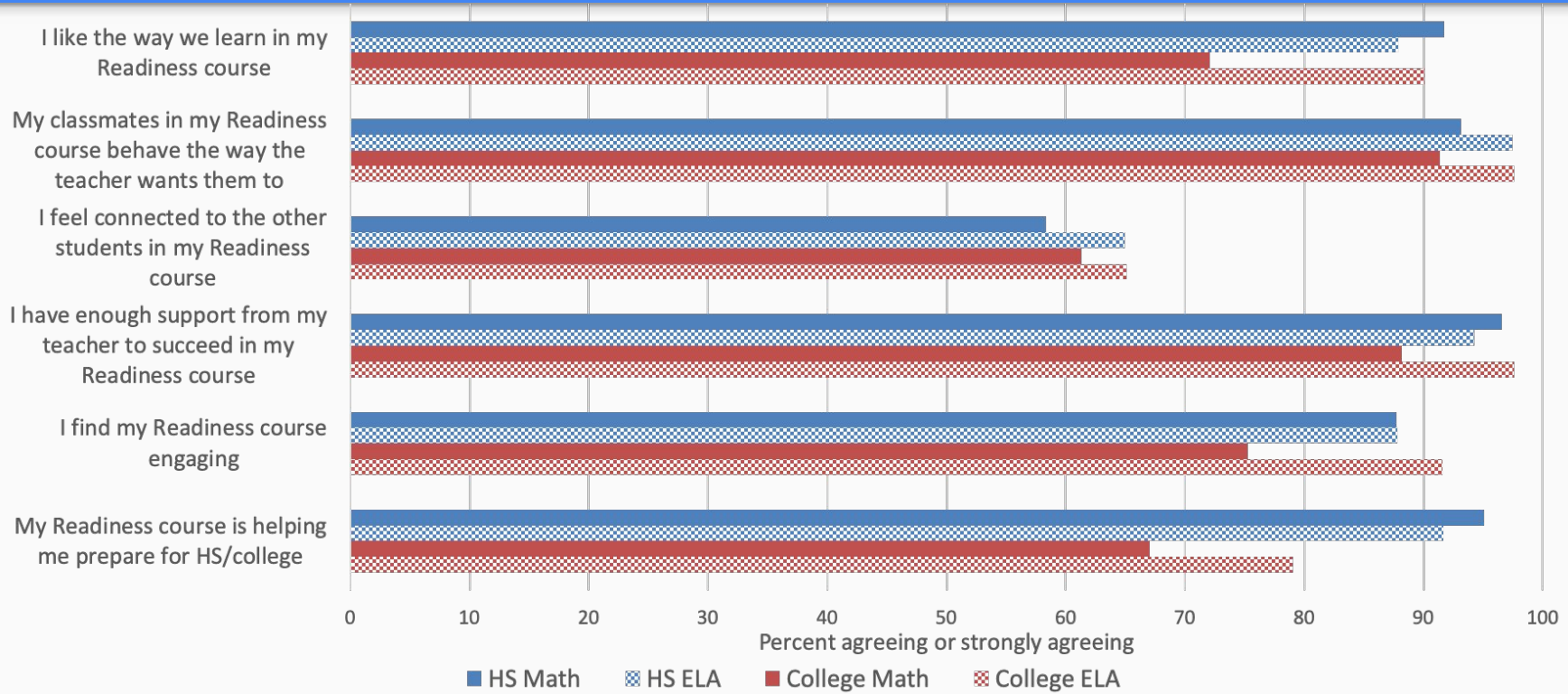
- Overall, 85% of respondents felt their course was meeting their expectations somewhat or very much.

Course Difficulty



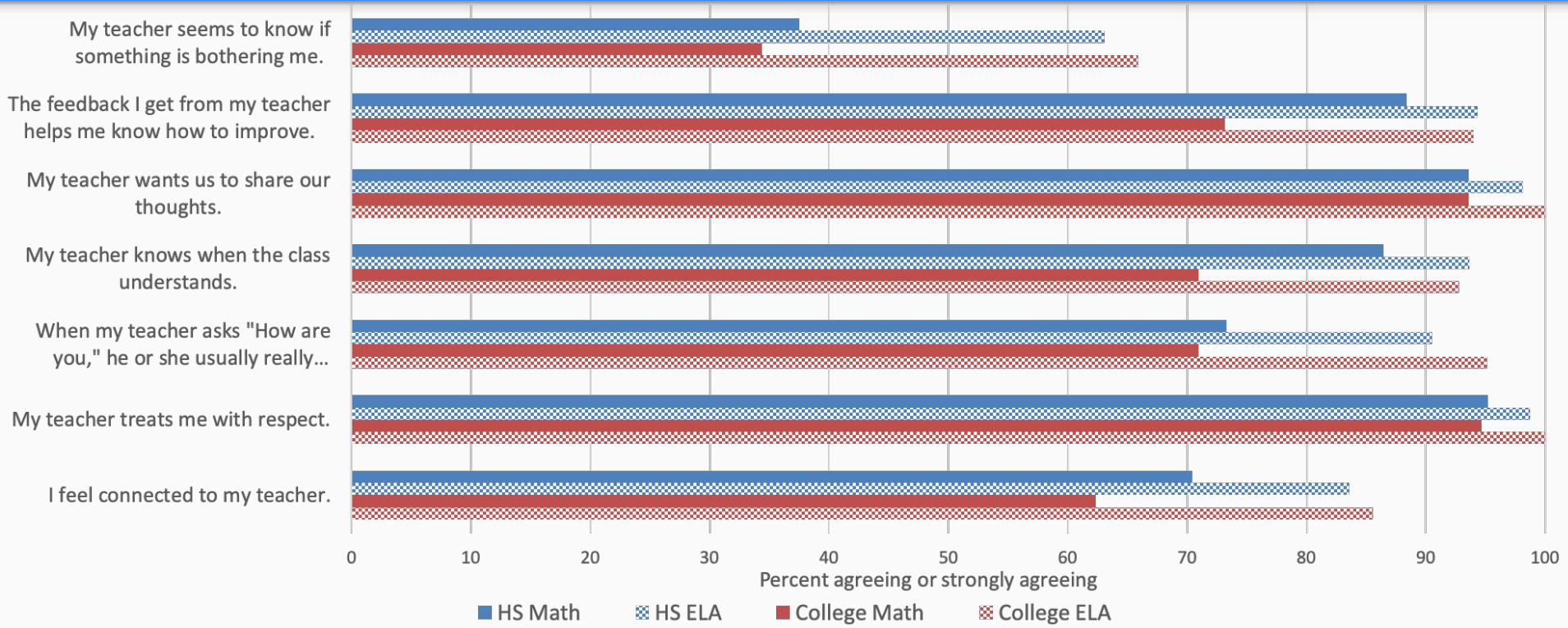
- Overall, 77% of respondents felt the coursework was at the right level of difficulty.

Course characteristics



- Students overwhelmingly found their courses engaging.
- Only about half of students felt connected to other students.

Teacher characteristics



- Students felt connected to their teachers overall, but were much more likely to feel connected to ELA teachers than math teachers

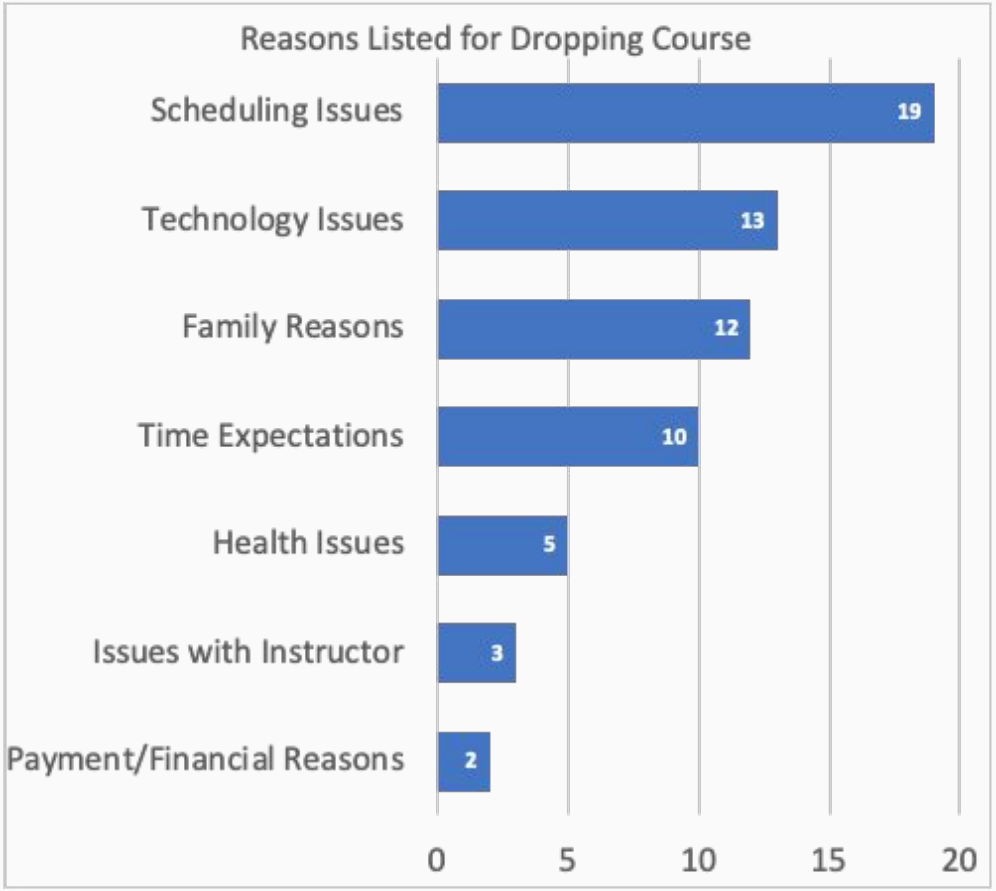
Dropped Survey Overview

- Who took the survey?
  - 39 of 397 dropped students (10% response rate)
  - 62% 9th graders
  - 38% 12th graders
  - 49% students of color

- 18% of respondents took a different summer course (mostly 12th graders)

- **Note that this is likely not a representative sample of dropped students**

Dropped Survey Overview



- The most common reason for dropping was **scheduling issues**
  - 10% of respondents mentioned having a job as a reason for dropping
  - Others mentioned the inability to make every course and caregiving responsibilities
- The second most common reason for dropping was **technology issues**
  - Students specifically called out issues in the beginning of the course as well as difficulty with using RealizeIt and “logging on”

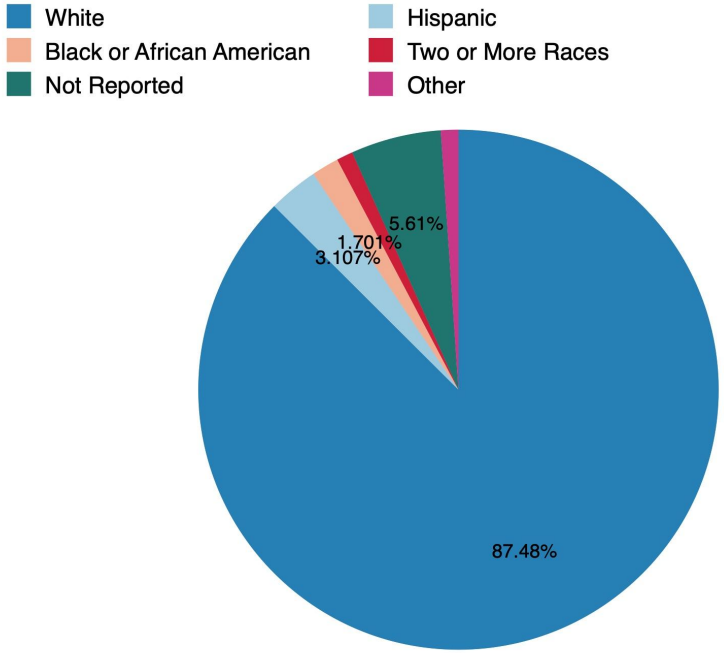
Teachers

Teacher Hiring Process

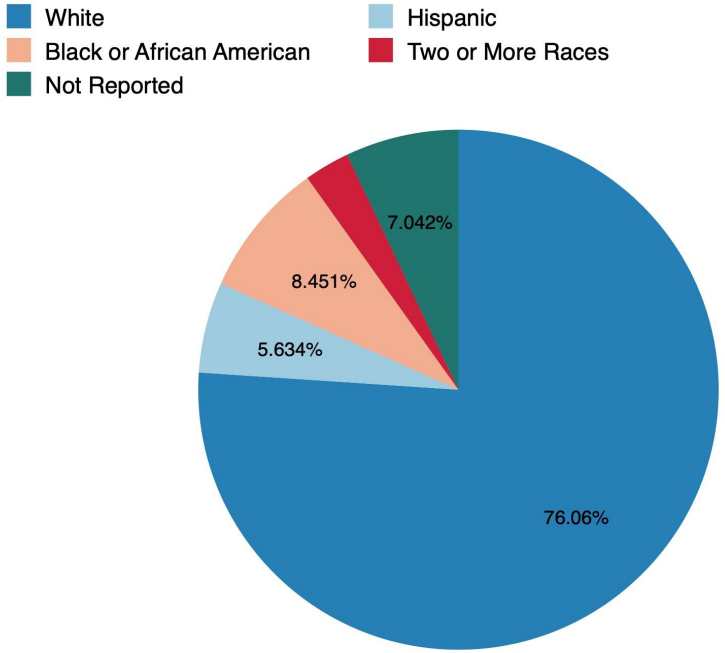
200+ applicants	83 invited	71 hired
Over 200 teachers applied to teach Readiness courses. Applicants were asked about their certification, current teaching assignment, and **what equity means to them.**	83 teachers were invited to participate in a week of professional development	71 teachers were ultimately hired and taught courses

- **Hiring decisions were based mainly on responses to the equity question.**
  - Strong responses connected equity to the readiness program and expressed belief in the ability of all students.

Teacher Race/Ethnicity

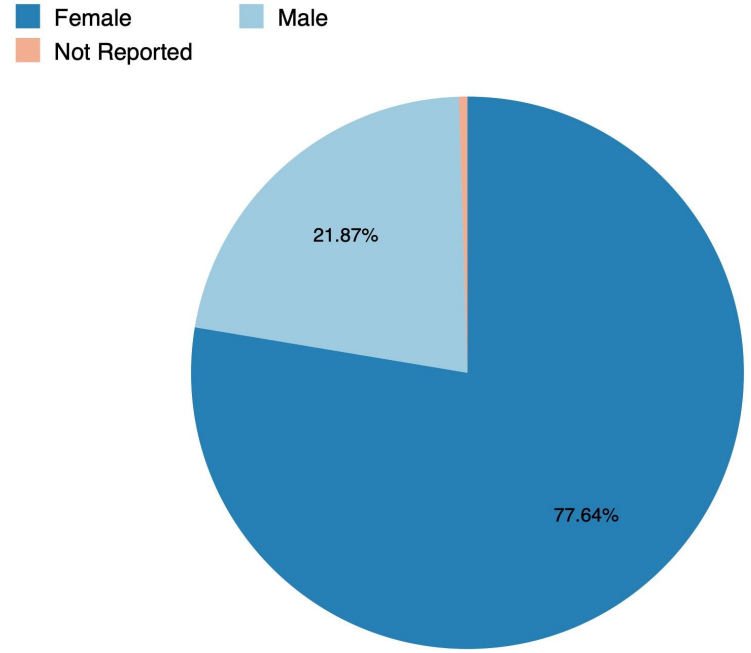


All Teachers in the State

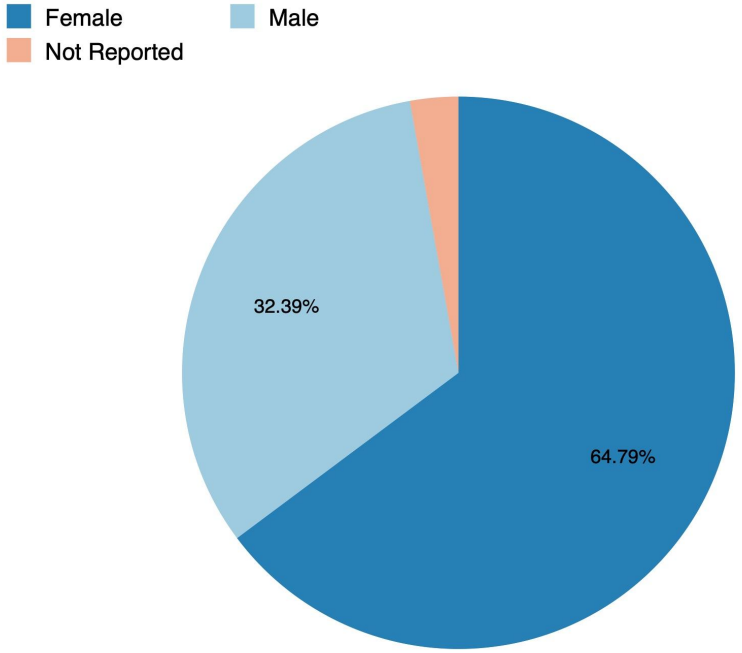


Readiness Teachers

Teacher Gender

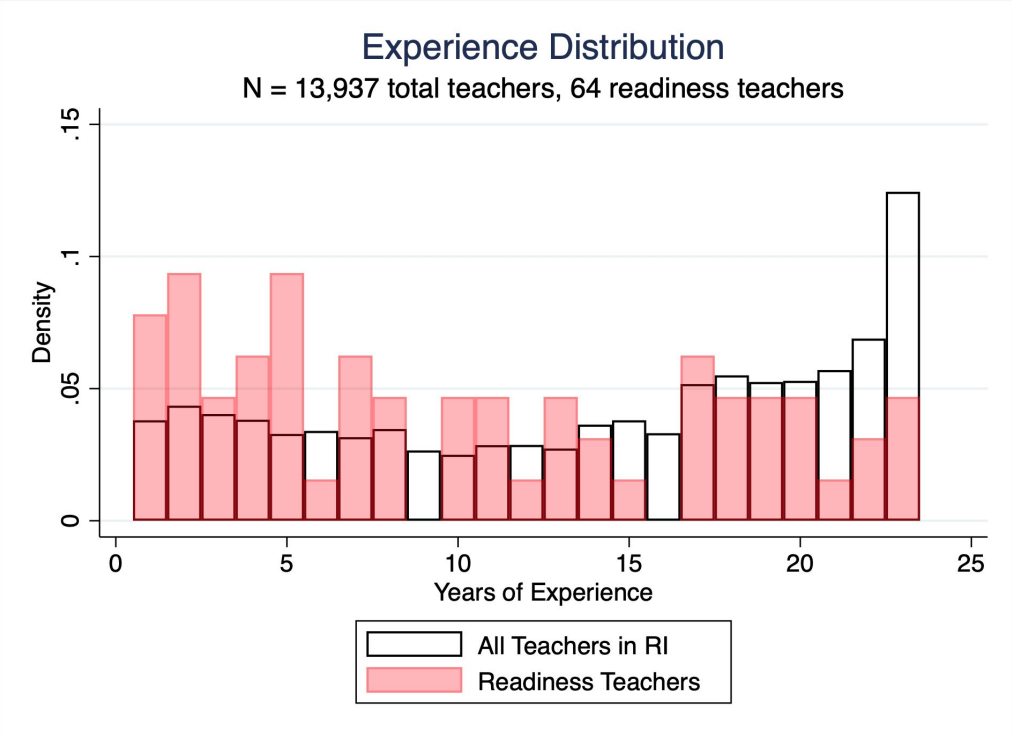


All Teachers in the State



Readiness Teachers

Teacher Years of Experience



All Teachers in State vs **Readiness Teachers**

Note: 7 Readiness teachers were not in the experience data

Teacher Takeaways

- Compared to all teachers in the state, readiness teachers were less likely to be white and more likely to be male
  - **Demographically, readiness teachers are more likely to look like Rhode Island students, compared to all teachers in the state**

- **The readiness teacher cohort had varied years of experience. Overall, readiness teachers were more likely to be relatively early in their career, compared to all teachers in the state.**