



From Data to Action: Using a Mixed-Methods, Longitudinal Research Evaluation for Ongoing Improvement in GEAR UP - North Carolina

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Outline



1. Process of Creating a Research Plan
2. Review of Initial Findings



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I. Process for Creating Research Plan

- ◆ Research Questions
- ◆ Sample & Comparison Groups
- ◆ RQ1
- ◆ RQ2



Research Questions



- 1. How effective is GU-NC in preparing students to succeed in college?**
 - a. What is the overall impact of GU-NC on the preparation of students for college?
- 2. What contributes to the success of GU-NC?**
 - a. What are the critical elements of a successful GU-NC model?
 - b. How is GU-NC implemented across the state?
 - c. In what ways has GU-NC increased students' social capital as it relates to educational attainment?
 - d. To what extent do GU-NC students feel prepared for post-secondary education?



Sample & Comparison Group



Quantitative

- Sample: NC Students receiving the GU-NC intervention
- Comparison Groups:
 - Students enrolled in current GU-NC schools prior to GU
 - Students enrolled in other NC schools in the same grades and years

Qualitative

- Case studies- 17 schools (10 HS and 7 MS)
 - NC Students receiving the GU-NC intervention within case study sites
 - Parents of NC students who receive the GU-NC intervention within case study sites
 - Principals and school personnel within case study sites
 - District personnel within case study sites
- All GU-NC coordinators and facilitators



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RQ1: How effective is GU-NC in preparing students to succeed in college?



Methodology	Analysis	Purpose	Data Sources
Quantitative Analysis	<ul style="list-style-type: none"> • Quasi-experimental design: <ul style="list-style-type: none"> ○ Propensity score matching ○ Difference-in-difference • Intermediate outcomes 	<ul style="list-style-type: none"> • To provide a causal estimate of the impact of the GU-NC program on national and state-level outcomes 	<ul style="list-style-type: none"> • GU-NC activities • North Carolina College Knowledge Inventory (NCKI) • PLAN, EXPLORE, ACT, Test Scores • Student demographics & enrollment* • Course taking, remedial course taking* • GPAs & graduation*

* Data pulled from primary, secondary, and post-secondary schooling
+ Data pulled from post-secondary schooling



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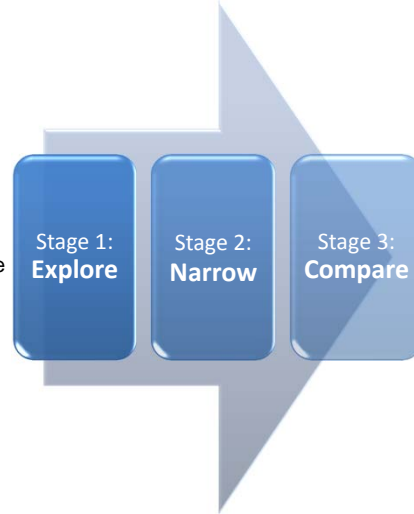


RQ2: What contributes to the success of GU-NC?



Exploratory Evaluation

1. Explore (2014-18 school years)
 - Collect data for the purpose of documenting variability and understanding the program
1. Narrow (2017-19 school years)
 - Both quantitative and qualitative data will be used to identify successful GU-NC models
1. Compare (2018-19)
 - Findings from the summative impact evaluation will be cross-walked with the in- depth qualitative analysis to help inform decisions on implementation.



RQ2: What contributes to the success of GU-NC?



RQ2.i: What are the critical elements of successful GU-NC models?

Methodology	Analysis	Purpose	Data Sources
Quantitative	<ul style="list-style-type: none"> • Regression analyses 	<ul style="list-style-type: none"> • To provide a causal estimate of the impact of the GU-NC program on national and state-level outcomes 	<ul style="list-style-type: none"> • Secondary administrative data
Qualitative	<ul style="list-style-type: none"> • Conducted analysis of case studies using Atlas.ti qualitative software 	<ul style="list-style-type: none"> • To understand similarities and differences across programs 	<ul style="list-style-type: none"> • Observations • Archival data • Interviews • Focus Groups • Surveys





RQ2: What contributes to the success of GU-NC?



RQ2.ii: How is GU-NC implemented across the state?

Collect data regarding the overall logistics of the program and determine, what, if at all, additional services are being used to promote attendance to post-secondary schooling

Observations, archival data, interviews, and surveys

RQ2.iii: In what ways has GU-NC increased students' social capital as it relates to educational attainment?

Ask participants questions related to college-going culture, awareness of program, and how, if at all, they have gained knowledge about the preparation and application process for post-secondary schools

Archival data, interviews, and surveys

RQ2.iv: To what extent do GU-NC students feel prepared for post-secondary education?

Ask participants questions related to college-going culture and address the extent they feel prepared to attend post-secondary schooling

Student surveys



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II. Review of Initial Findings

- ◆ Stage One: Exploration
- ◆ Quantitative Findings
- ◆ Qualitative Findings
- ◆ Next Steps
- ◆ Questions & Answers



Stage One: Exploration



Quantitative Process

- Matching of administrative data with GU service data
- Descriptive statistics on demographics, GU services, and outcomes
- Propensity score matching models

Qualitative Process

- Administered 10 interviews to GU-NC coordinators
- 22 GU-NC facilitators completed online surveys
- 24 MS teachers completed online surveys
- Conduct 17 day-long observations



Quantitative Findings: Outcome Measures



Grade	Outcome Measures
7th Grade	Math/Reading Test Scores
8th Grade	Math/Reading Test Scores
	Algebra 1 enrollment
	Algebra 1 Test Scores
9th Grade	Algebra 1 or higher enrollment
	Algebra 1 Test Scores
	Cumulative GPA
10th Grade	On track for HS Grad
	On track for College
	GPA
11th Grade	On track for HS Grad
	On track for College
	GPA
12th Grade	GPA
	Graduation
	College Applications
Post-Secondary	NC Community College Enrollment & Persistence
	UNC System Enrollment & Persistence
	Remedial Course Taking
	NC Community College Degree
	UNC System Degree



Quantitative Findings: Demographics



- GEAR UP students and schools differ demographically from schools statewide on many characteristics

Variable	GEAR UP Students	Non GEAR UP Students	P Value
School Characteristics			
Rural	69.6%	51.3%	0.001***
Per Pupil Expenditure	\$9055	\$9520	0.571
Enrollment	624	590	0.378
Student Characteristics			
Free and Reduced Price Lunch	62.1%	48.9%	0.000***
Students with Disabilities	14.2%	13.1%	0.000***
Academically and Intellectually Gifted	18.3%	17.8%	0.040*
Limited English Proficiency	3.5%	3.7%	0.160
Black	33%	26.4%	0.000***
Hispanic	12.6%	12.3%	0.220
White	47.7%	53.6%	0.000***

*** indicates statistical significance, $p < 0.001$

* indicates statistical significance, $p < 0.05$



Quantitative Findings: Outcomes



- Comparing outcome measures for GEAR UP students to students in the same schools prior to GEAR UP
 - Small decreases in math test scores and graduation rates
 - Small increases in reading test scores
- Other changes in educational programs statewide could also be responsible for changes (or lack of changes) in outcomes

	Pre-GEAR UP	GEAR UP	Change
7 th Grade Math Score	-0.175	-0.234	-0.059
7 th Grade Reading Score	-0.219	-0.215	0.004
8 th Grade Math Score	-0.176	-0.186	-0.010
8 th Grade Reading Score	-0.228	-0.216	0.012
Graduation Rate	93.83%	93.07%	-0.73%



Quantitative Findings: Outcomes



- Compared to other students in the same grades and years, GU students score significantly lower on all outcome measures
 - These differences are probably explained by differences in school and student characteristics
 - More advanced analysis is needed to estimate effects of GU services on student outcomes

	GU	Non-GU	Difference
Reading Test Score	-0.167	0.027	-0.194***
Math Test Score	-0.194	0.037	-0.231***
Algebra I Test Score	0.691	0.817	-0.125***
Algebra I Enrollment	0.253	0.301	-0.048***
Graduation	0.932	0.942	-0.010***

*** indicates statistical significance, $p < 0.001$



Quantitative Findings: Outcomes



- GU students are matched to similar students statewide
- Compared to matched students, GU students have outcomes that are similar or better
 - Significantly higher reading test scores in 7th & 8th grade
 - All other outcomes are the same between GU and matched sample

	Unmatched Sample			Matched Sample	
	GU	Non-GU	Difference	Non-GU	Difference
Reading Test Score	-0.167	0.027	-0.194***	-0.197	0.031**
Math Test Score	-0.194	0.037	-0.231***	-0.210	0.016
Algebra I Test Score	0.691	0.817	-0.125***	0.667	0.024
Algebra I Enrollment	0.253	0.301	-0.048***	0.242	0.011
Graduation	0.932	0.942	-0.010***	0.909	0.022

- Future analyses will identify effects for specific GU services and individual districts



Qualitative Findings



- Overall participants identified field trips to colleges as the most successful aspect of GU-NC, and that tutoring was the most essential.

“Field trips to postsecondary schools as been the most successful. For many of our students, it is their first exposure to an institution of higher learning. Students return with an idea of what college actually looks like and having seen that there are students on those campuses that look like them.”

-GU-NC Facilitator

“[Tutoring] helps students get through the present year.”

-MS Teacher

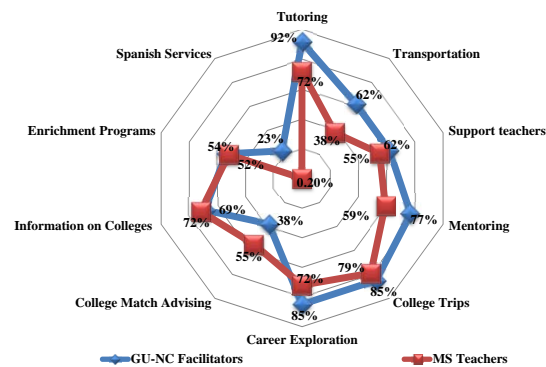


Qualitative Findings: Services Reported



- When asked about services offered, findings reveal that there was some discrepancy between what GU-NC facilitators offered in schools compared to what teachers perceived to be offered.

Figure 1. Comparing Services Reported by GU-NC Facilitators and Middle School Teachers





Qualitative Findings: Program Qualities



- Overwhelmingly, GU-NC personnel expressed dealing with a vast amount of misconceptions regarding their role of the program and their responsibilities

"I have become the unpaid counselor at the middle school, but I see a need there. You know, it is just filling in the gaps again."

-GU-NC Coordinator

- GU-NC personnel largely spoke about how they tailored their programs to their school's needs

"This is the beauty of GEAR UP-NC- we are able to create programs that meet the individual needs of our schools instead of having a cookie cutter program that we have to implement."

-GU-NC Facilitator



Qualitative Findings: Observations



- 11 of 17 (65%) spaces designated for GU-NC personnel
- 6 of 11 (55%) spaces were deemed in central locations within the schools
- 9 of 11 (82%) spaces made use of technology (e.g. computers, laptops, etc.)





Next Steps



Continue with Stage One: Exploration

- Exploration period will last until the beginning of the 2017-2018 school year
- During this time the evaluation team will collect data for the purpose of documenting variability and understanding the program
- The evaluation team will continue to discuss findings from both quantitative and qualitative methodologies
- The evaluation team will continue to meet with the GU-NC State Director to facilitate a conversation around the findings and ways to improve outcomes



Questions & Discussion





Contact Information:

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the evaluation to Sarah C. Fuller

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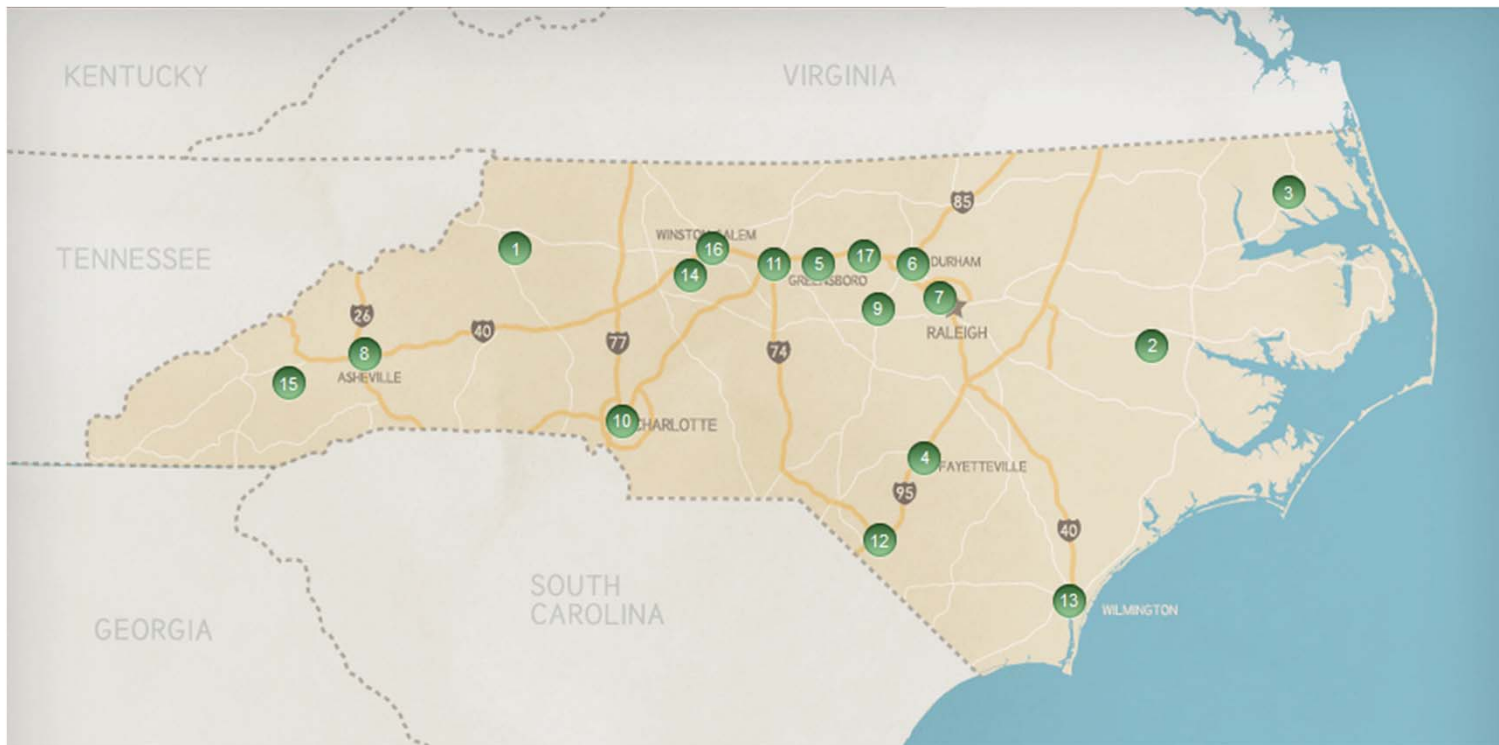
GEAR UP

NORTH CAROLINA

Carol Cutler White
State Director



The University of North Carolina 16 campus system

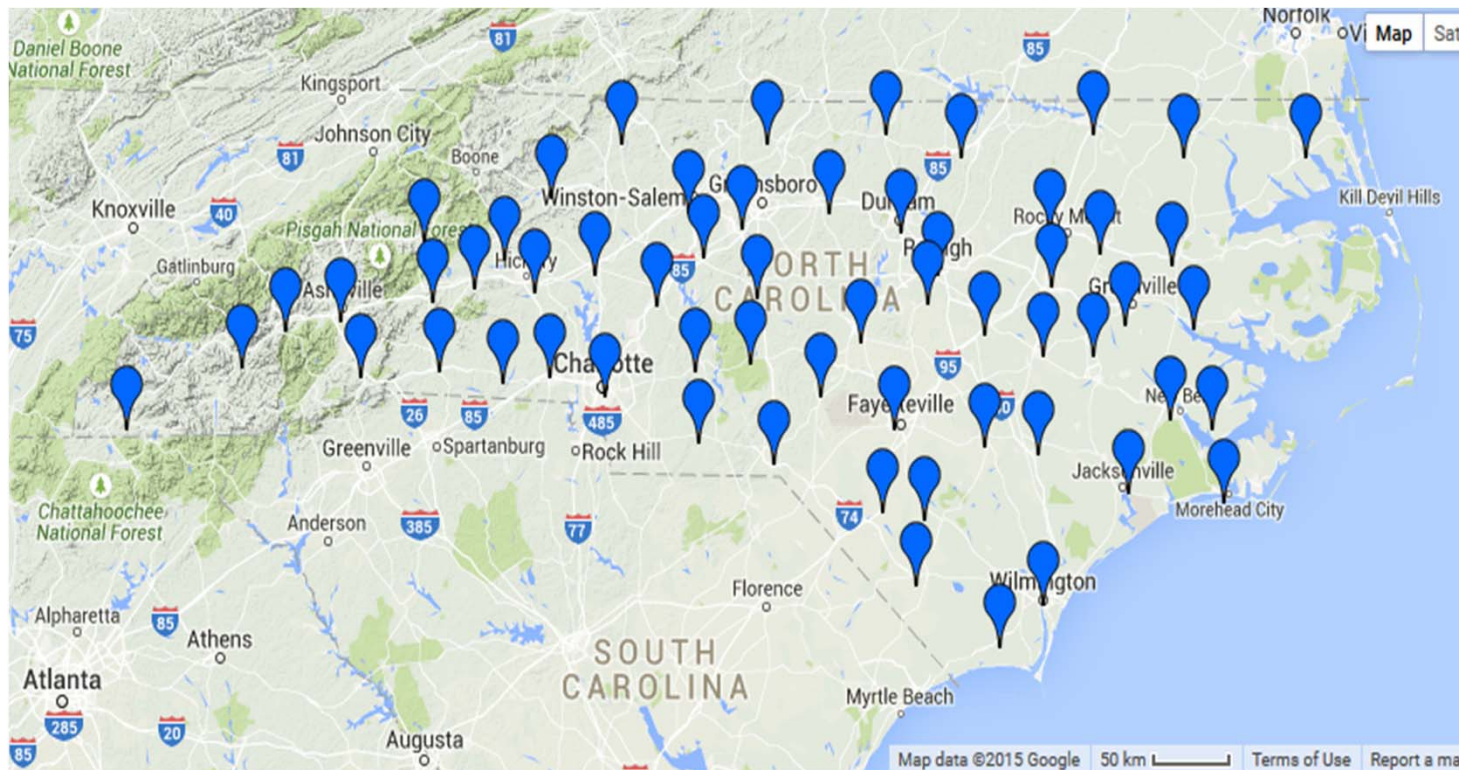


Defining college ready – University of NC


The University of North Carolina 4-year Minimum Admission Requirements

- ✓ 2.5 GPA
- ✓ 17 Composite ACT score and
- ✓ Took and passed specific math courses
- ✓ Some campuses have higher entry requirements

North Carolina Community College 58 college system

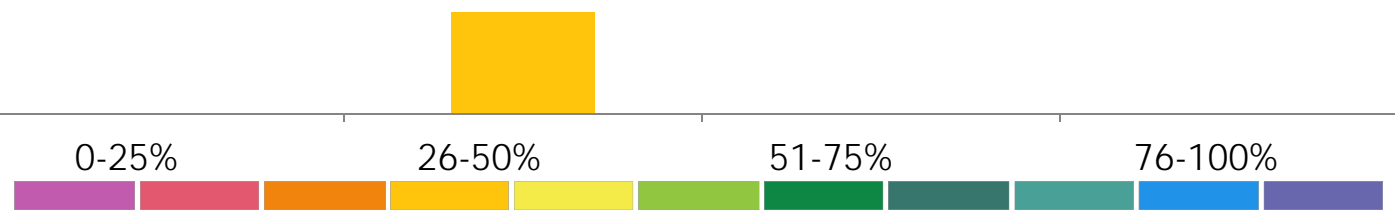


College ready – NC community colleges

Unweighted GPA = or >2.6 Four High School Math Courses*	Student is college ready for any gateway math course and any course that has a developmental math prerequisite.
Unweighted GPA = or > 2.6 And Four High School Math Courses*	Student is college ready for any English course up to and including English 111 and any course that has a developmental prerequisite.
Unweighted GPA < 2.6	<p>College will evaluate subject-area ACT or SAT using the following scores (based on national and state validation studies):</p> <p><u>English:</u> ACT Reading 22 OR ACT English 18 or SAT Writing 500 OR SAT Critical Reading 500</p> <p><u>Math:</u> ACT Math 22 or SAT Math 500</p>
Unweighted GPA < 2.6 and subject-area score(s) below college ready	Student will take subject-area State Board-approved assessment(s) to determine placement.
Students without a recent transcript GPA or without ACT or SAT scores	<p>Student will take subject-area State Board-approved assessment(s) to determine placement</p> 

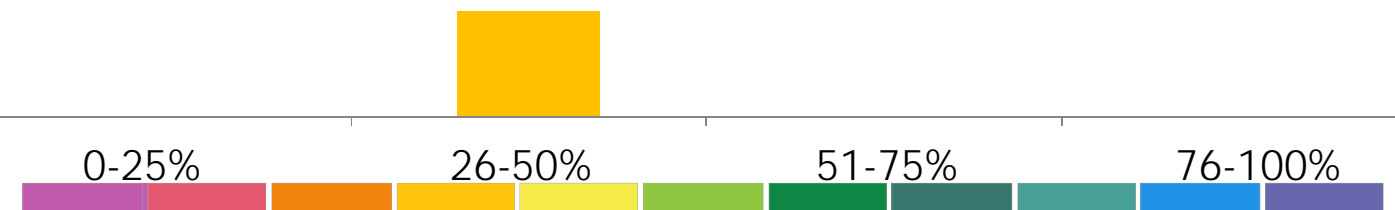
Key Performance Indicators

30% College Ready – GEAR UP All High School Seniors



N= 3337

28% College Ready – Mid-size Rural County Schools Seniors



N= 345

District level GEAR UP Required Services

Rigorous academic curriculum

- Dual enrollment through Career and College Promise
- Advanced Placement
- International Baccalaureate
- Early College

Student and Family GEAR UP Required Services

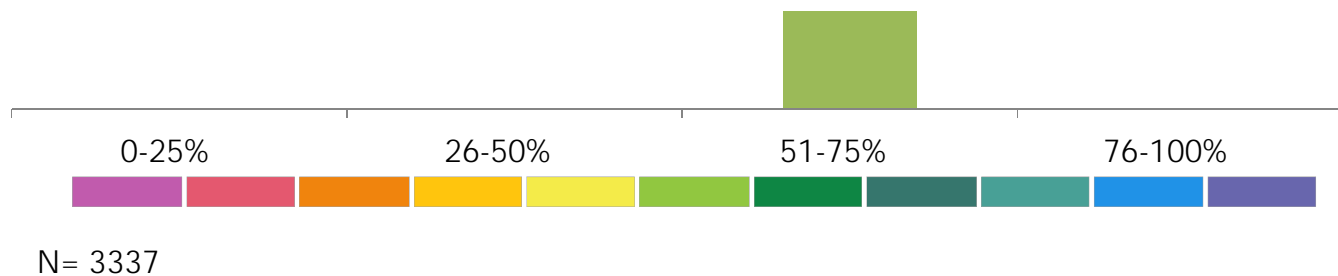
- Financial Aid Counseling/Advising
- Counseling, Advising, Academic and Career Planning
- Student Comprehensive Mentoring

GEAR UP Allowable Services

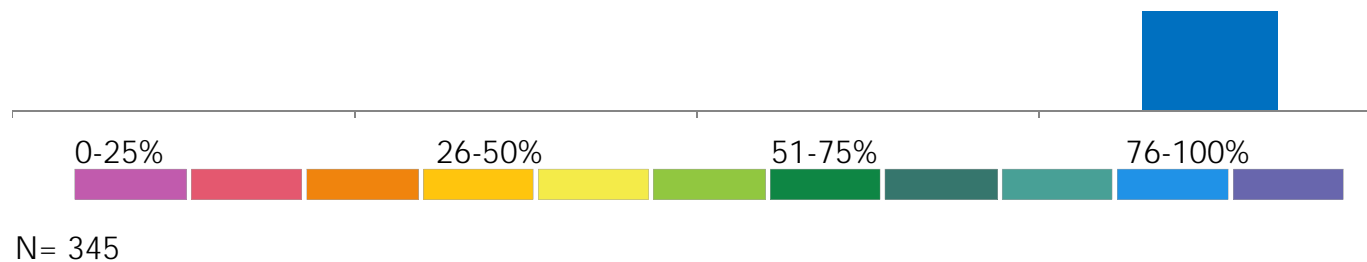
- College student shadowing
- Job shadow/internships
- College visits
- Enrichment trips

Breakdown of college ready enrollment

71% in Rigorous Math - GU All High School Seniors

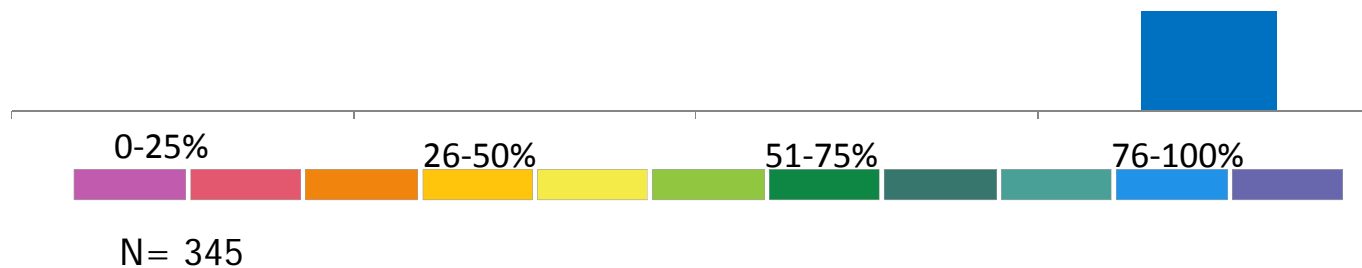


80% in Rigorous Math – Mid-size Rural County Schools Seniors



Addressing college ready

80% in Rigorous Math – Mid-size Rural County Schools Seniors

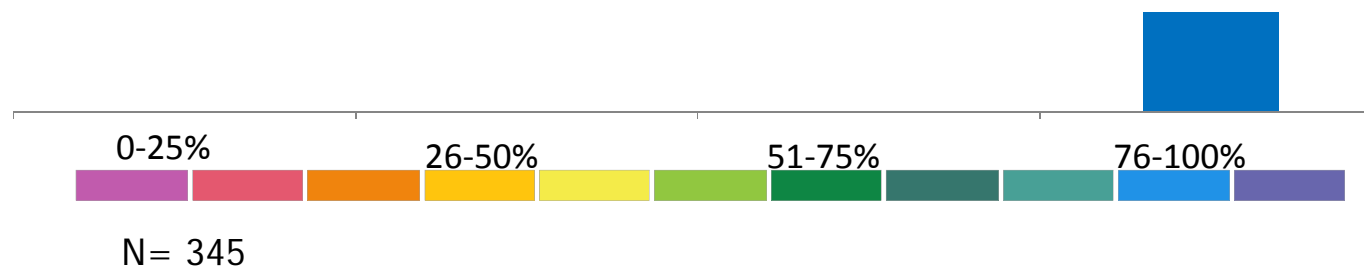


District question

1. Which students have taken the math courses but failed the End of Course exam?

Breakdown of college ready

80% in Rigorous Math – Mid-size Rural County Schools Seniors

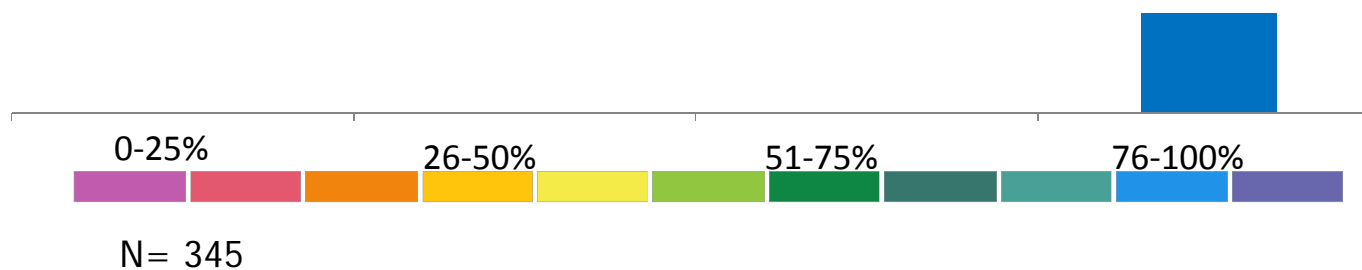


District question

1. Which students within this class meet the ACT and GPA requirements for being college ready, but are not enrolling in and completing the proper math courses?

Addressing college ready

80% in Rigorous Math – Mid-size Rural County Schools Seniors

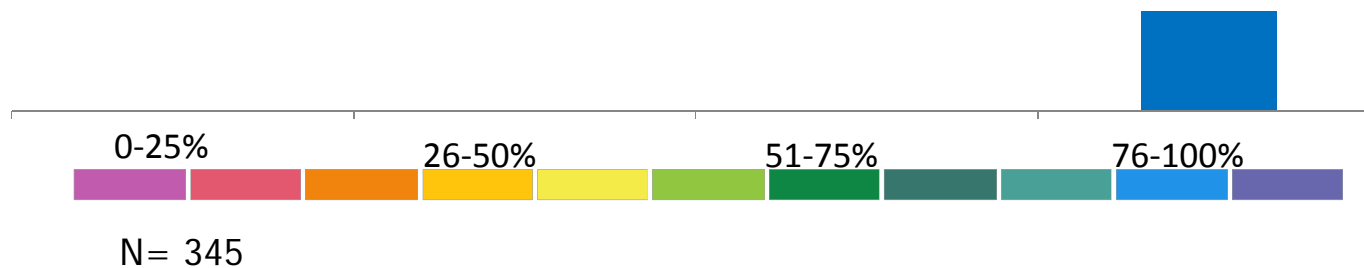


District question

1. What does the district/school need to be able to offer rigorous math and match students to proper courses to be college ready?

Addressing college ready

80% in Rigorous Math – Mid-size Rural County Schools Seniors

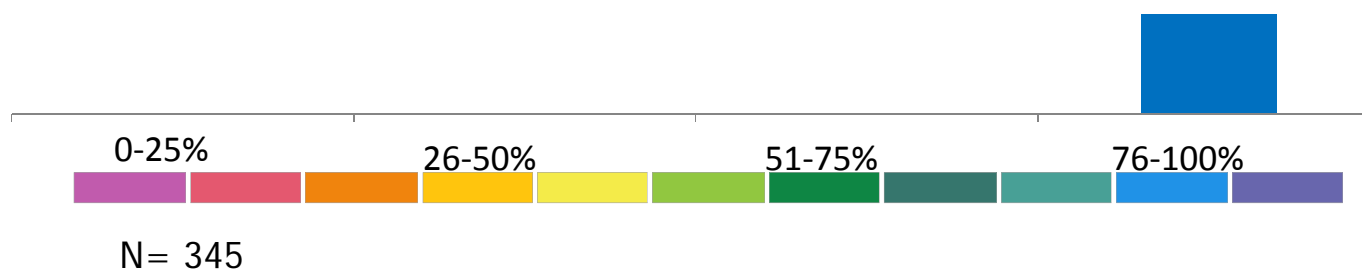


GEAR UP funds can be used for:

- Teacher certifications
- NC Virtual Public Schools
- Other

Addressing college ready

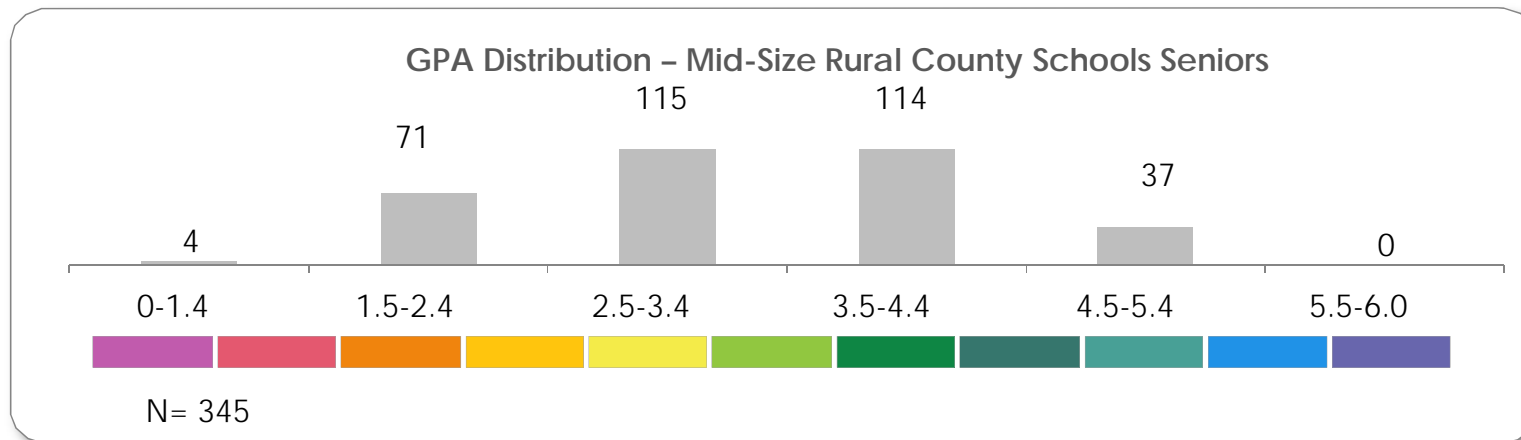
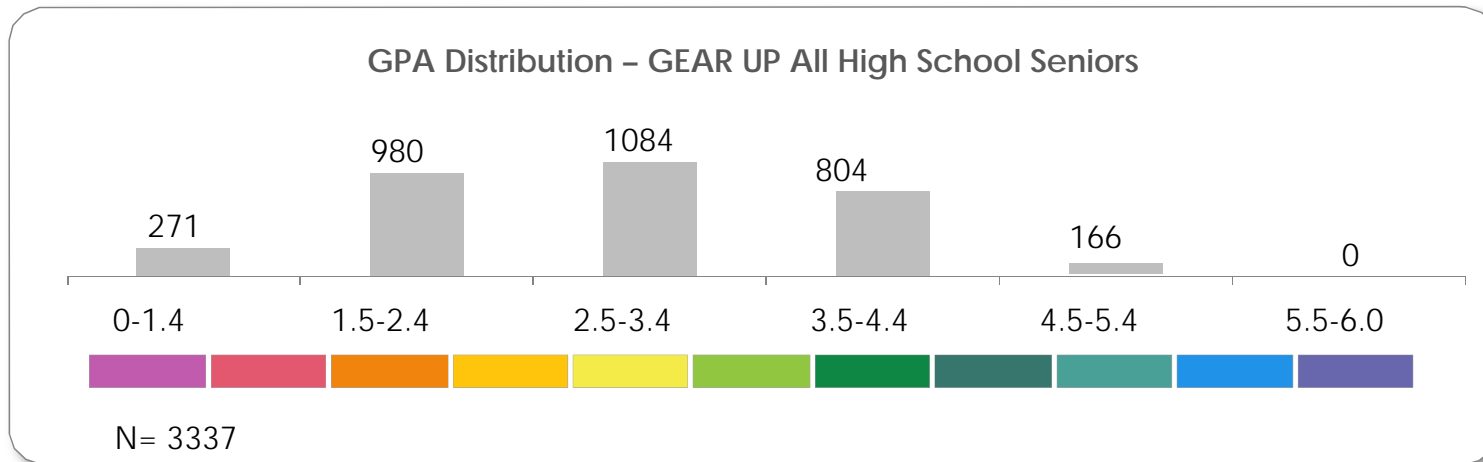
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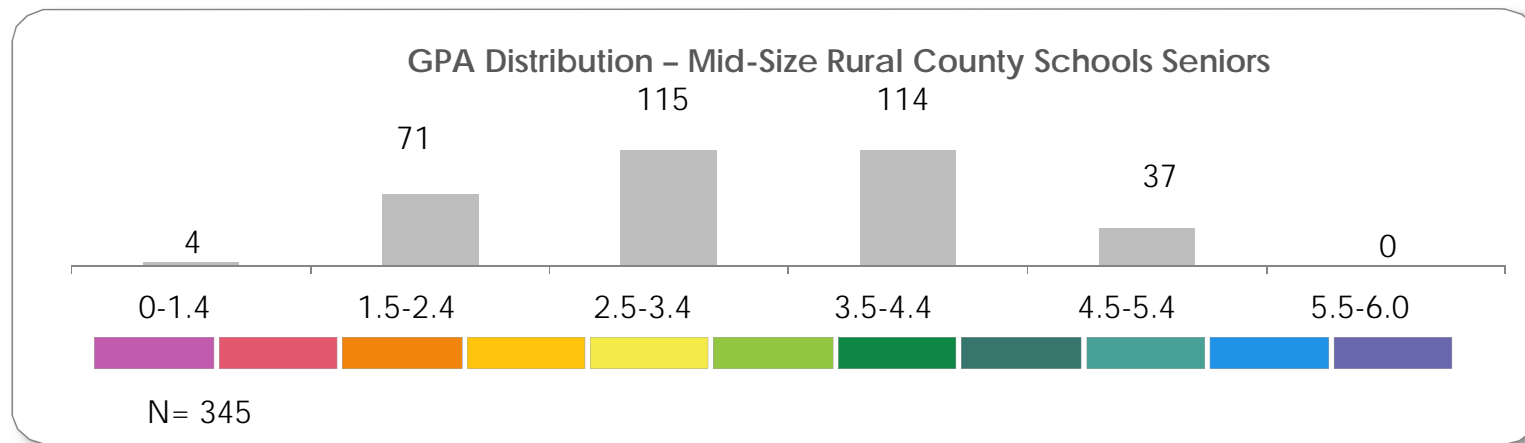
GEAR UP can fund

1. Tutoring
2. After school enrichment
3. Pre-graduation remediation
4. Summer bridge for remediation

Addressing college ready - GPA



Addressing college ready - GPA



District questions

- How will college application counseling/advising be distinguished across the GPA range?
- What GEAR UP services can be provided to earlier grades to improve GPA distribution?

Addressing college ready - ACT

- All NC students take the ACT in the spring of the Junior year
- GEAR UP can provide test prep
 - Certify teachers to offer test prep all year during Junior year
 - Access SAS Curriculum Pathways to build math enrichment
 - Offer tutoring
 - Summer enrichment – ACT test prep

Data as formative assessment for improvement

- Apply the APR measures to inform districts
 - Makes the APR a useful exercise
- Pull the data together for schools/districts at a very high level
- Involve the right leadership
- Individualize by school
- Interpret the data and show progress
- Don't use data in a negative way

Data as formative assessment for improvement

- Tie outcomes to GEAR UP services
- Consult year round, not just a one time “report card”
- Make the data useful for formative feedback
- “It’s all about the data – not hoping”
- Use rigorous research to prove outcomes

Contact Information

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