2015 CoACT Data Analysis

Outline

- Data Review
- Analysis Goals
- District Level Analysis
- Network Level
- School Level
- Individual School – 452 Case Study

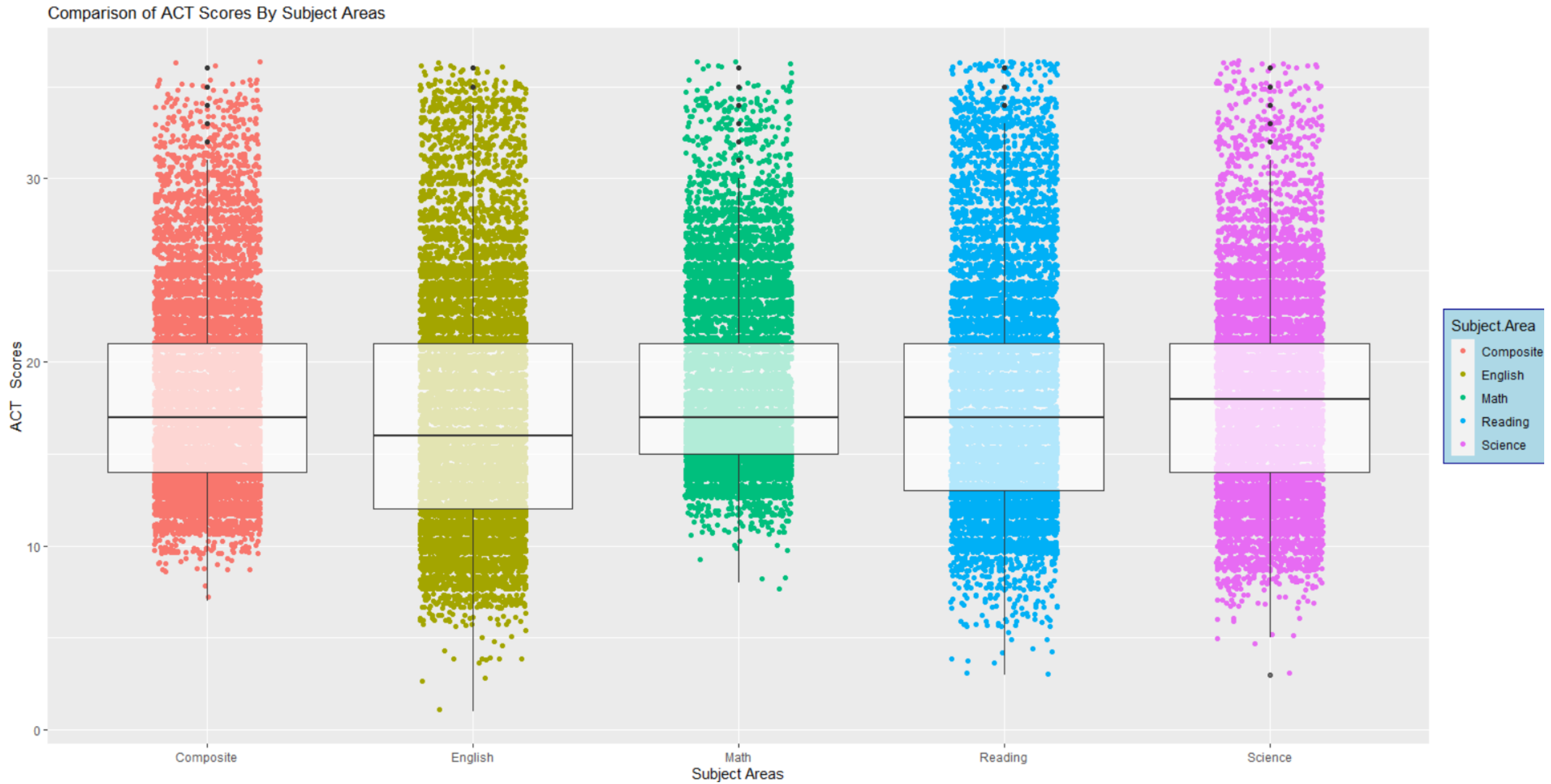
Data Review

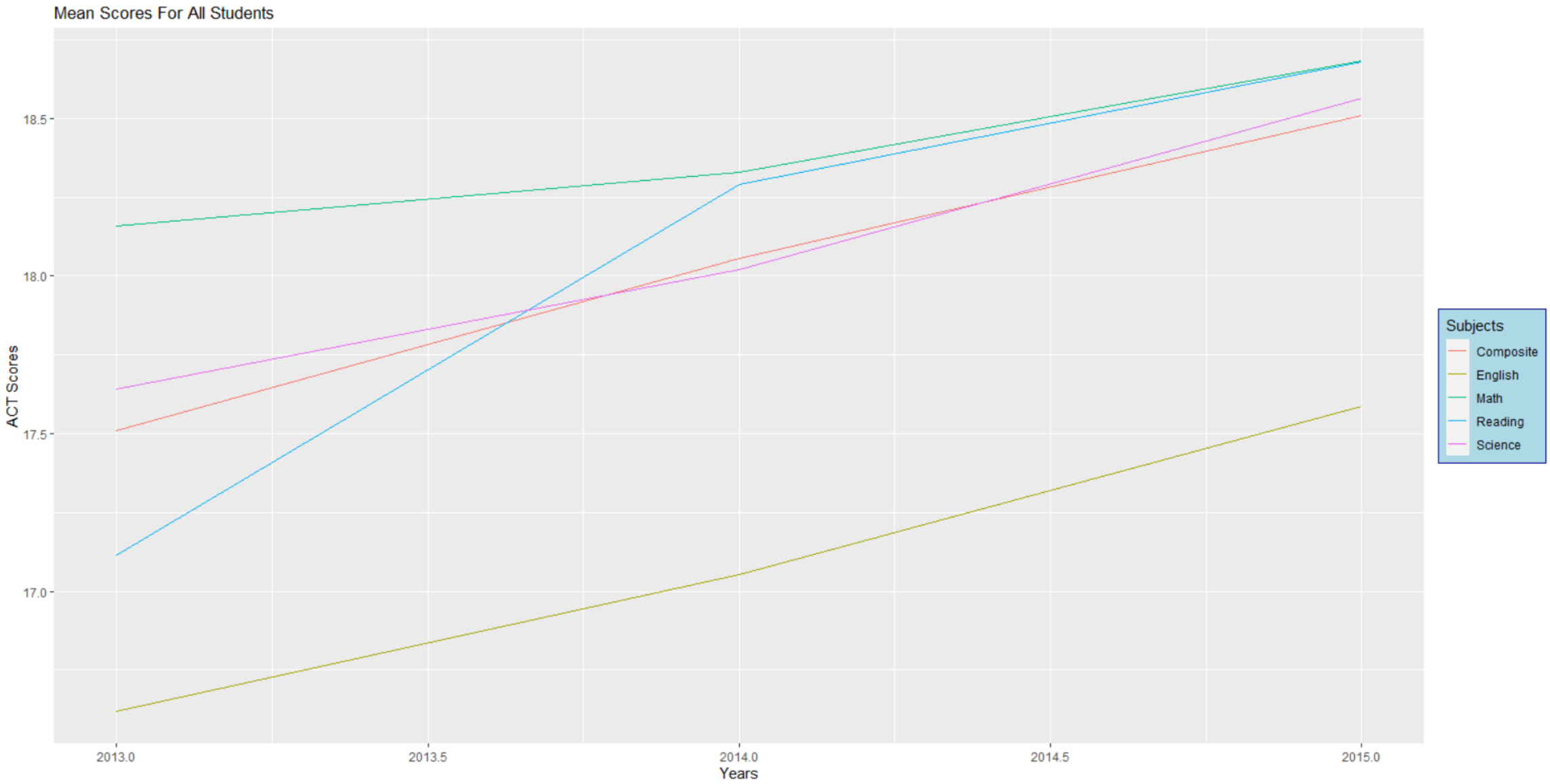
- 2015 CoACT results
  - Benchmark for College Preparedness
  - Key thresholds in scoring
    - 18 in English
    - 22 in Mathematics
    - 22 in Reading
    - 18 in Science

Analysis Goals

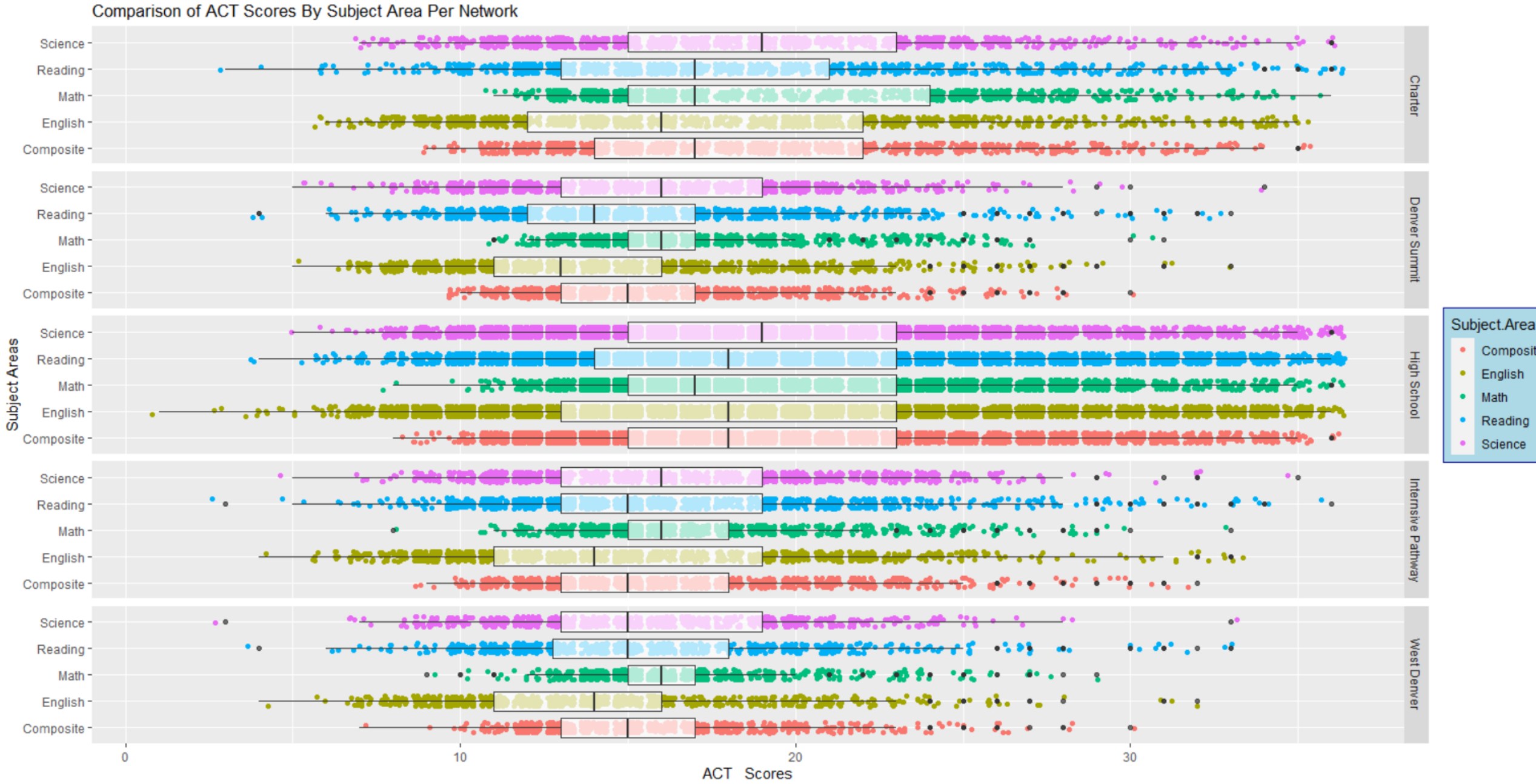
- Understand global performance trends
- Identify relative strengthens and weaknesses at network and school level
- Identify vulnerable student demographics to focus resource distribution for corrective action and prioritization

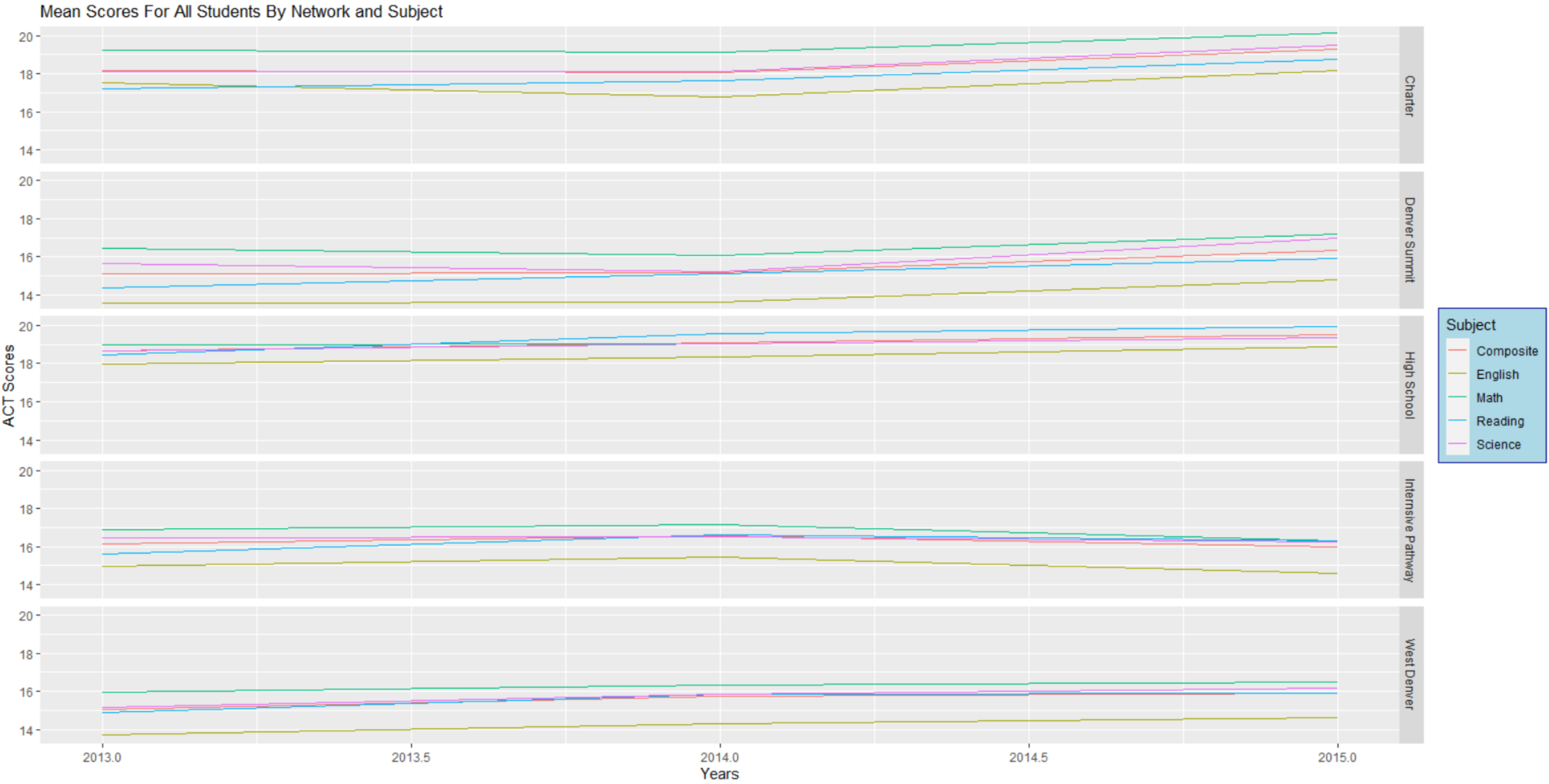
District Analysis



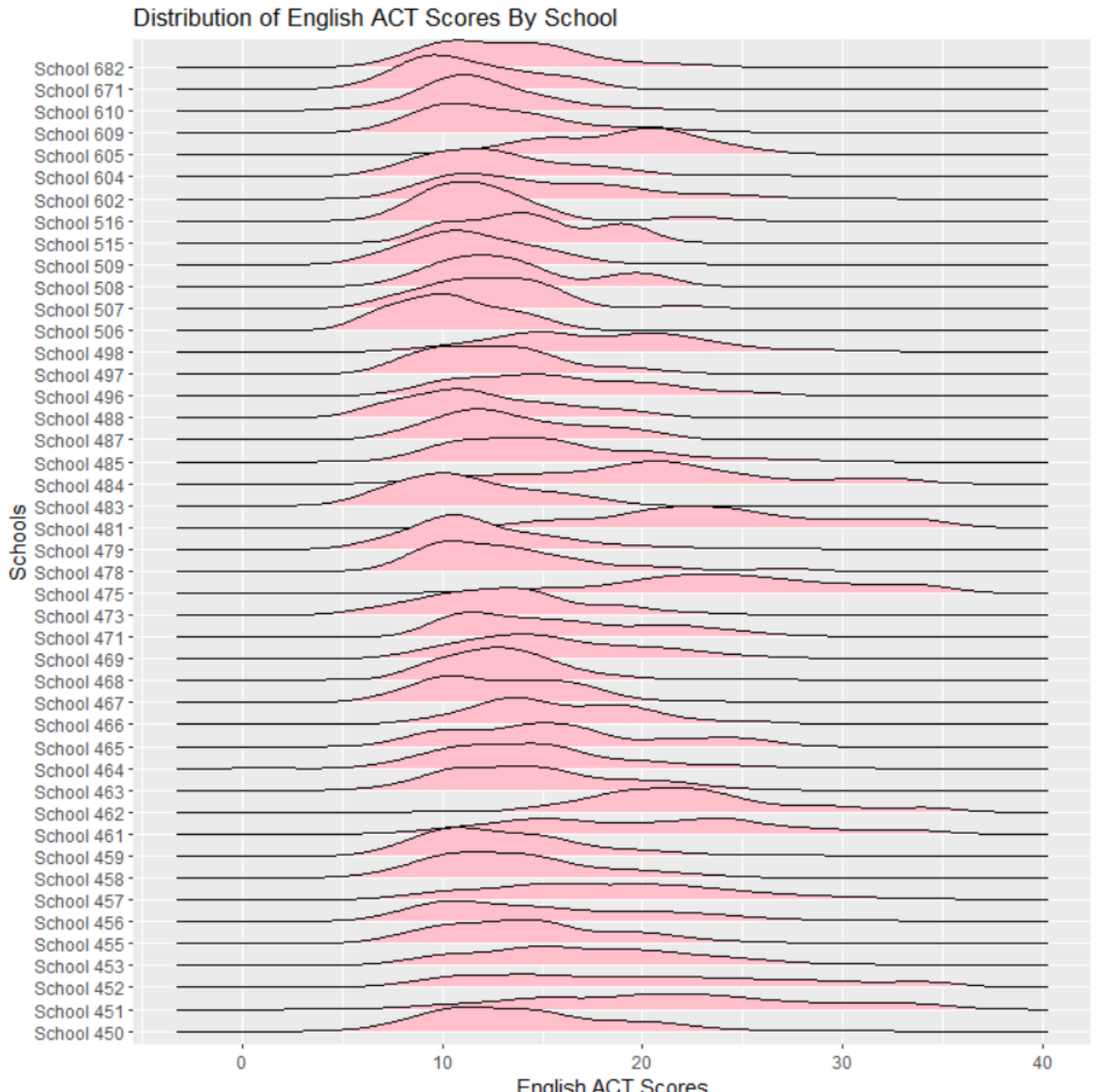

Mean Scores For All Students
ACT Scores
18.5
18.0
17.5
17.0
2013.0
2013.5
2014.0
2014.5
2015.0
Years
Subjects
Composite
English
Math
Reading
Science

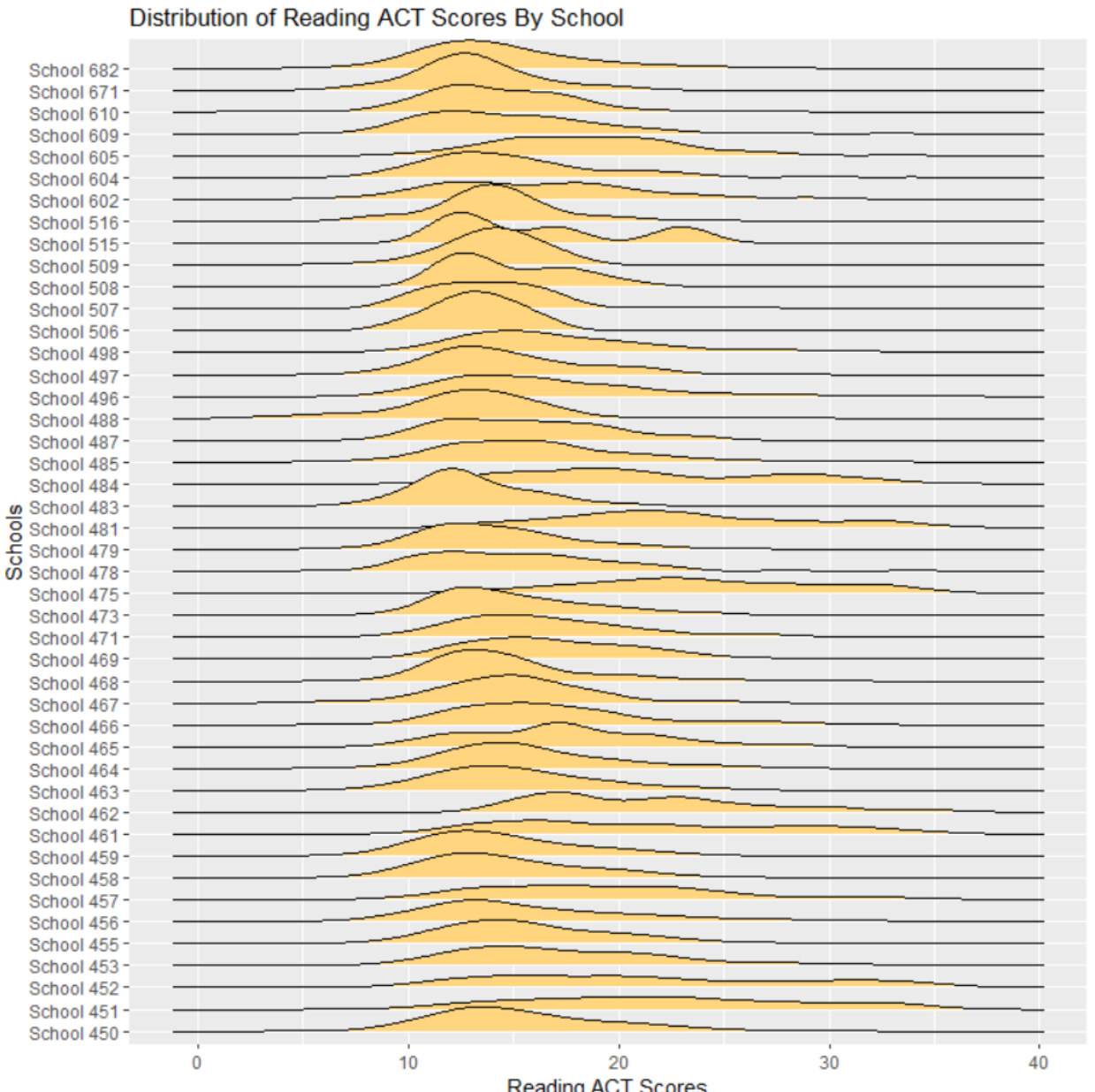
Network Level

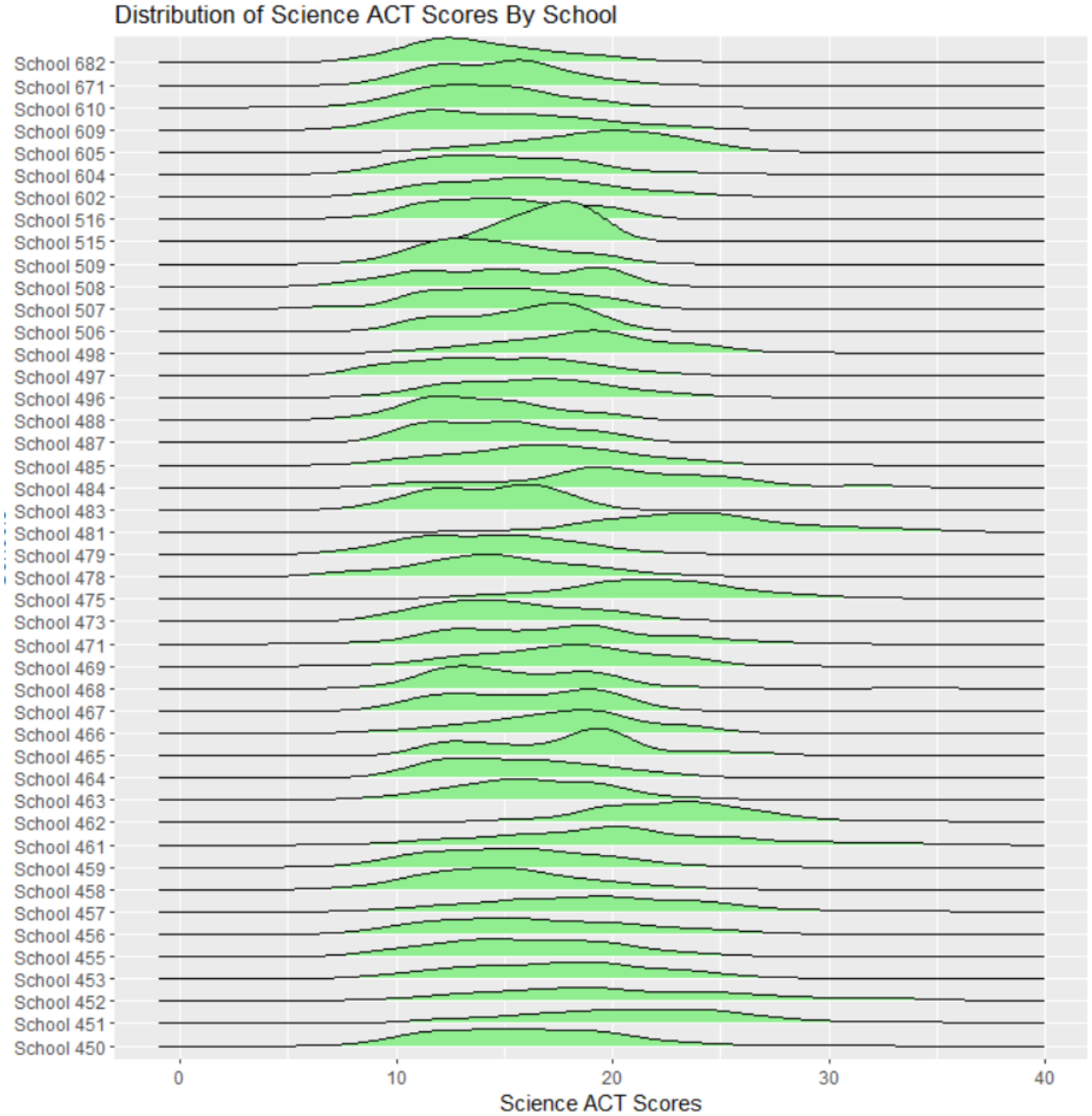


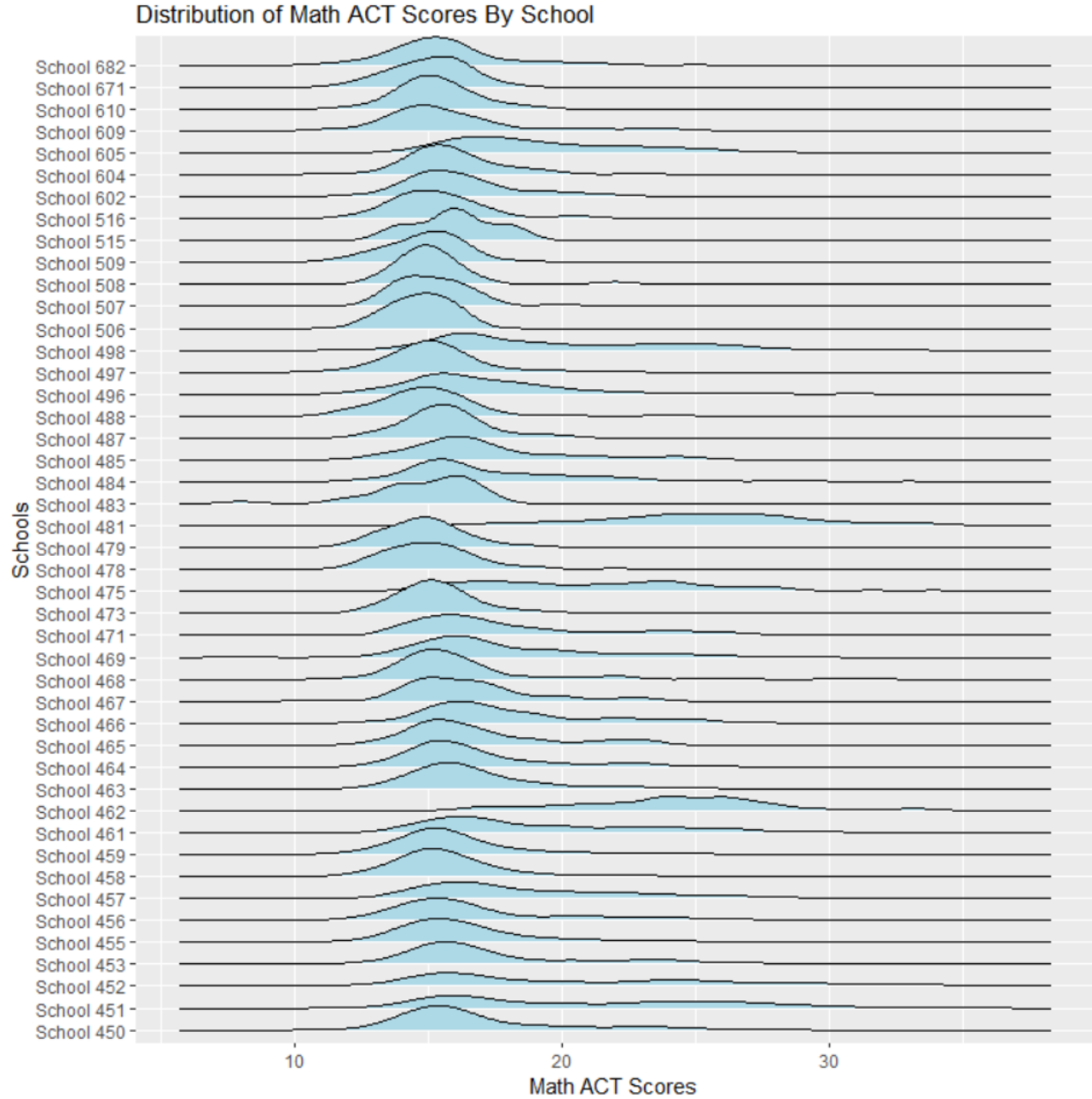

Mean Scores For All Students By Network and Subject
ACT Scores
20
18
16
14
Charter
Denver Summit
High School
Internsive Pathway
West Denver
2013.0
2013.5
2014.0
2014.5
2015.0
Years
Subject
Composite
English
Math
Reading
Science

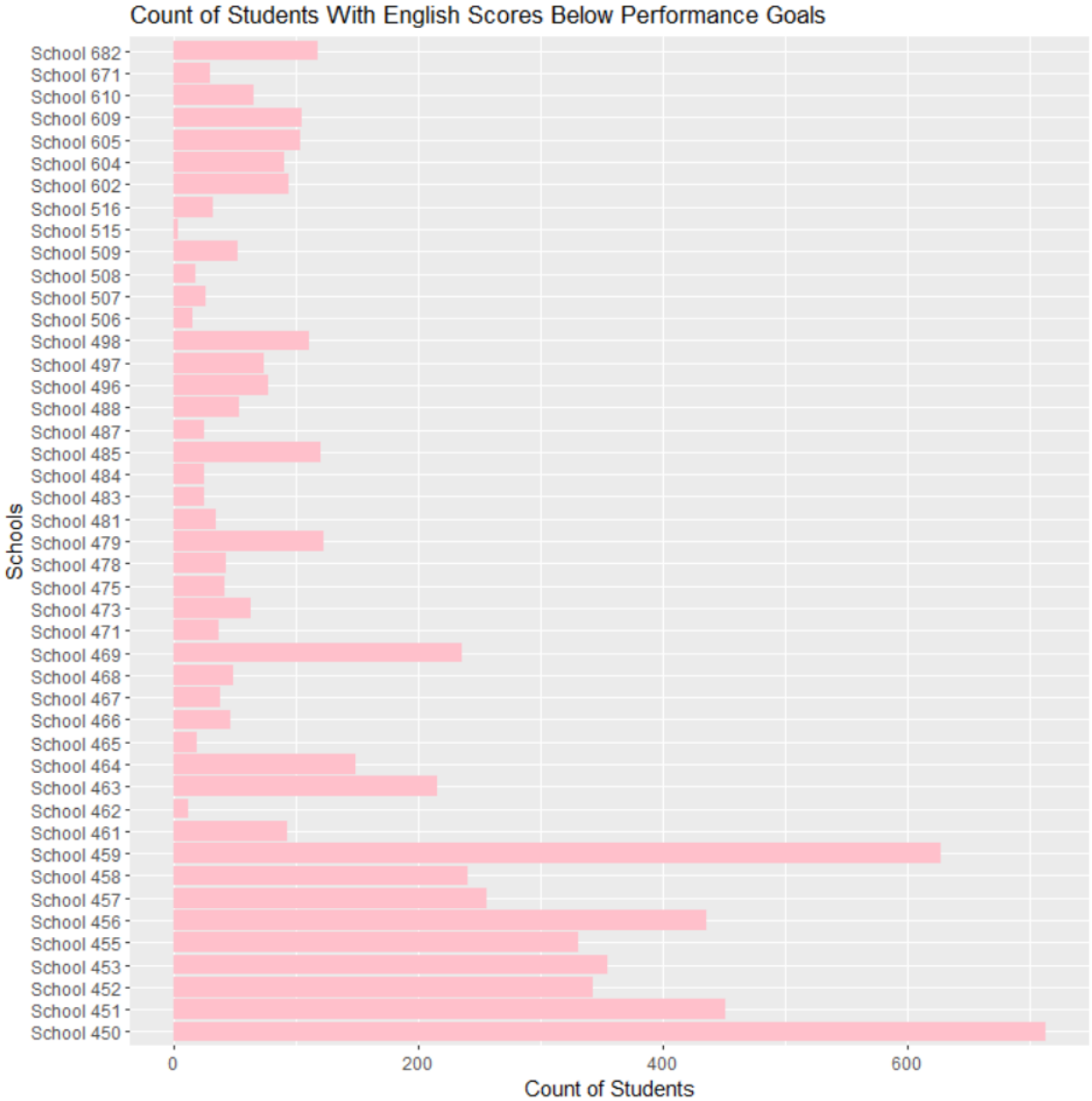
School Level Analysis






Distribution of Science ACT Scores By School
School 682
School 671
School 610
School 609
School 605
School 604
School 602
School 516
School 515
School 509
School 508
School 507
School 506
School 498
School 497
School 496
School 488
School 487
School 485
School 484
School 483
School 481
School 479
School 478
School 475
School 473
School 471
School 469
School 468
School 467
School 466
School 465
School 464
School 463
School 462
School 461
School 459
School 458
School 457
School 456
School 455
School 453
School 452
School 451
School 450
0
10
20
30
40
Science ACT Scores


Distribution of Math ACT Scores By School
Schools
School 682
School 671
School 610
School 609
School 605
School 604
School 602
School 516
School 515
School 509
School 508
School 507
School 506
School 498
School 497
School 496
School 488
School 487
School 485
School 484
School 483
School 481
School 479
School 478
School 475
School 473
School 471
School 469
School 468
School 467
School 466
School 465
School 464
School 463
School 462
School 461
School 459
School 458
School 457
School 456
School 455
School 453
School 452
School 451
School 450
10
20
30
Math ACT Scores


Count of Students With English Scores Below Performance Goals
Schools
School 682
School 671
School 610
School 609
School 605
School 604
School 602
School 516
School 515
School 509
School 508
School 507
School 506
School 498
School 497
School 496
School 488
School 487
School 485
School 484
School 483
School 481
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School 478
School 475
School 473
School 471
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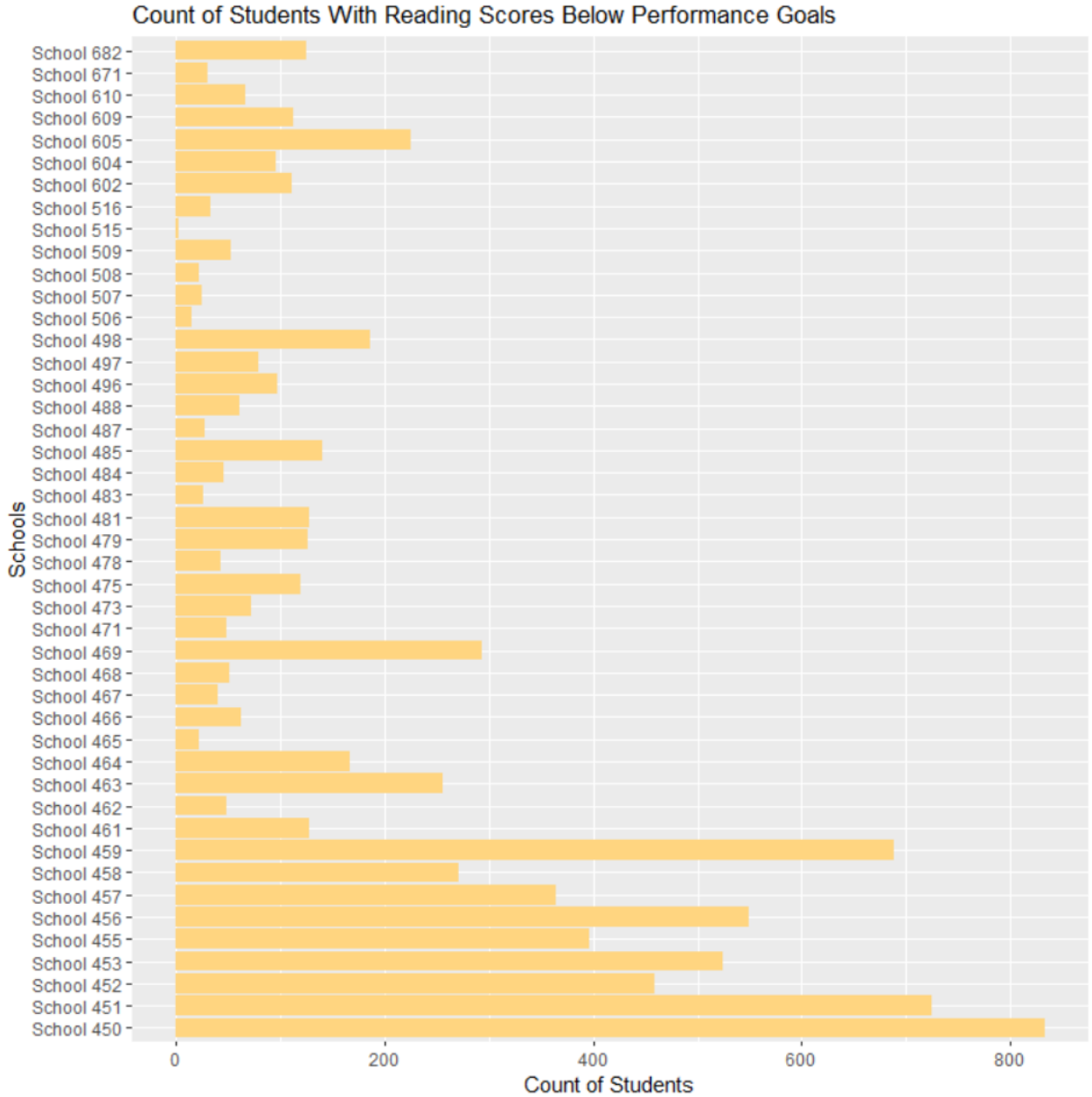
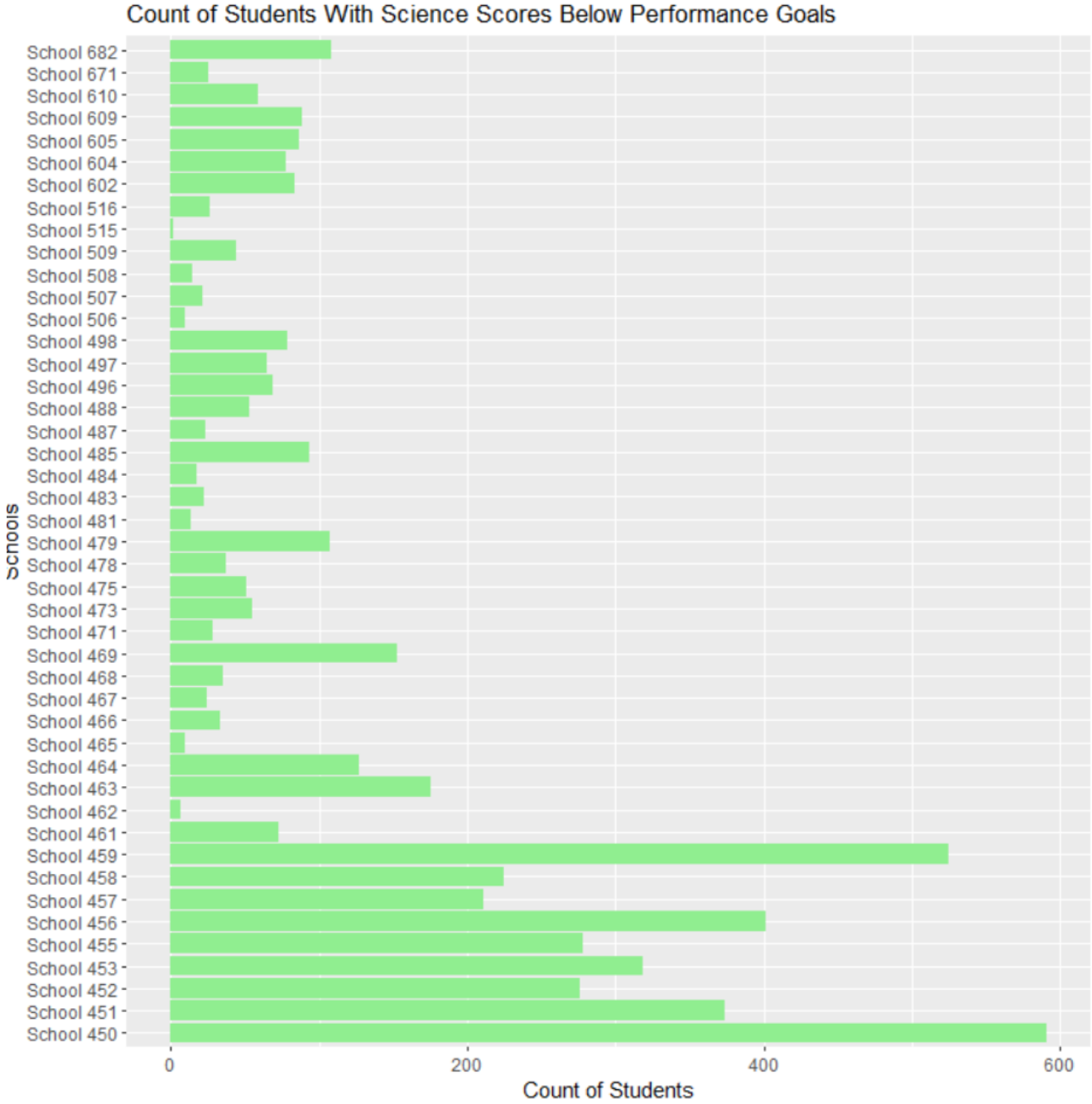
School 467
School 466
School 465
School 464
School 463
School 462
School 461
School 459
School 458
School 457
School 456
School 455
School 453
School 452
School 451
School 450
0
200
400
600
Count of Students


Count of Students With Reading Scores Below Performance Goals
Schools
School 682
School 671
School 610
School 609
School 605
School 604
School 602
School 516
School 515
School 509
School 508
School 507
School 506
School 498
School 497
School 496
School 488
School 487
School 485
School 484
School 483
School 481
School 479
School 478
School 475
School 473
School 471
School 469
School 468
School 467
School 466
School 465
School 464
School 463
School 462
School 461
School 459
School 458
School 457
School 456
School 455
School 453
School 452
School 451
School 450
0
200
400
600
800
Count of Students


Count of Students With Science Scores Below Performance Goals
Schools
School 682
School 671
School 610
School 609
School 605
School 604
School 602
School 516
School 515
School 509
School 508
School 507
School 506
School 498
School 497
School 496
School 488
School 487
School 485
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School 466
School 465
School 464
School 463
School 462
School 461
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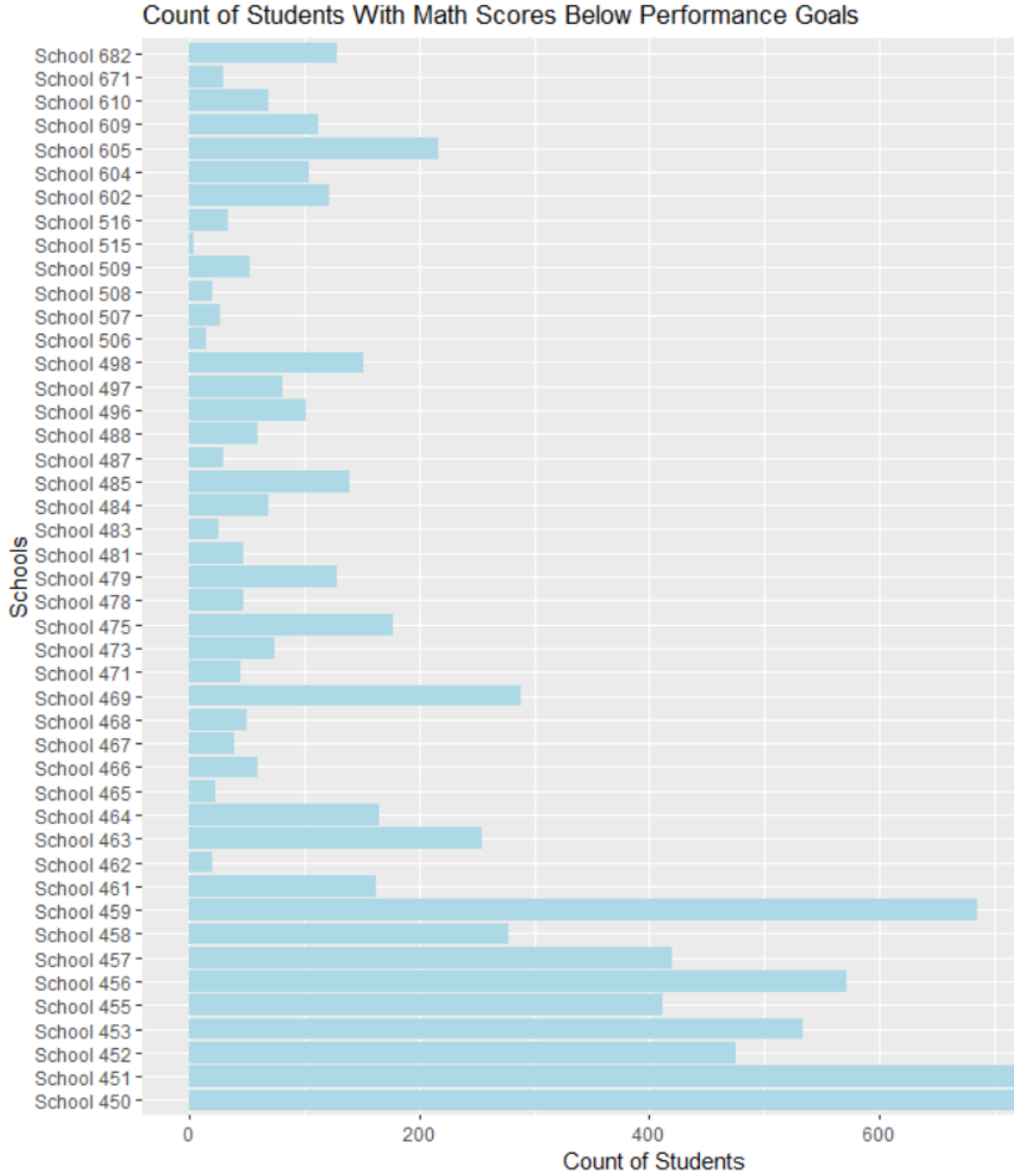
School 458
School 457
School 456
School 455
School 453
School 452
School 451
School 450
0
200
400
600
Count of Students


Count of Students With Math Scores Below Performance Goals
Schools
School 682
School 671
School 610
School 609
School 605
School 604
School 602
School 516
School 515
School 509
School 508
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School 466
School 465
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School 463
School 462
School 461
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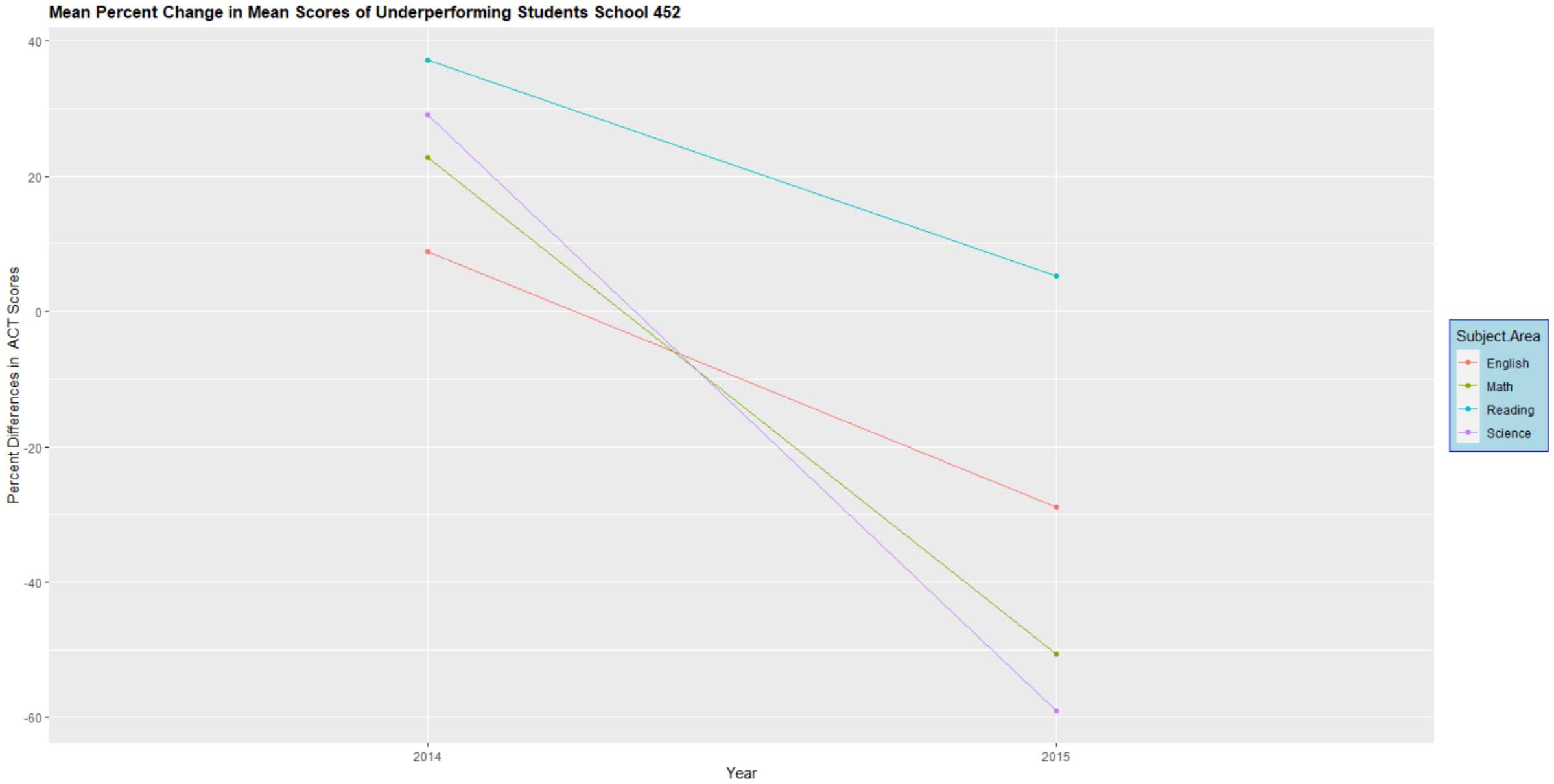
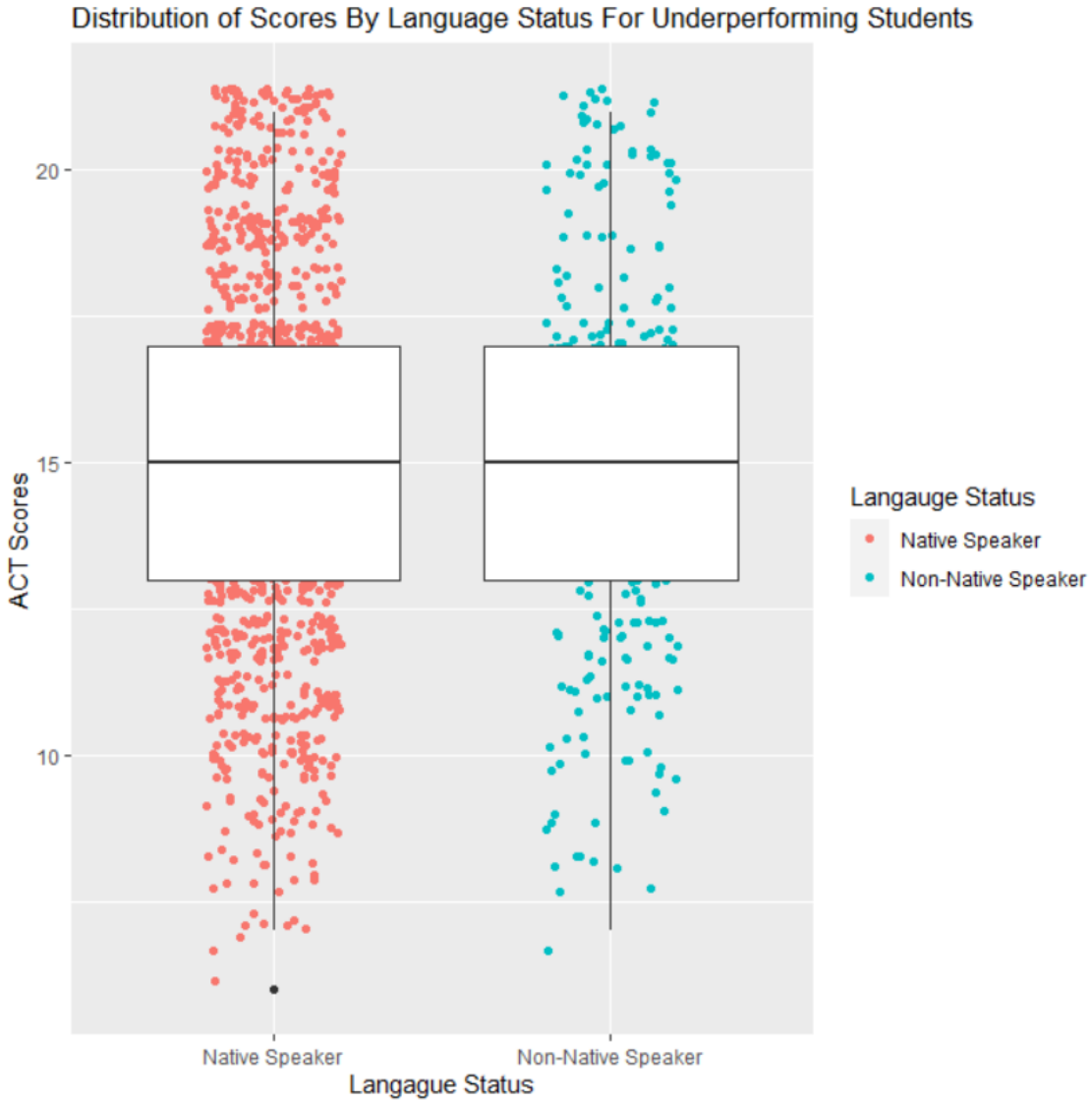
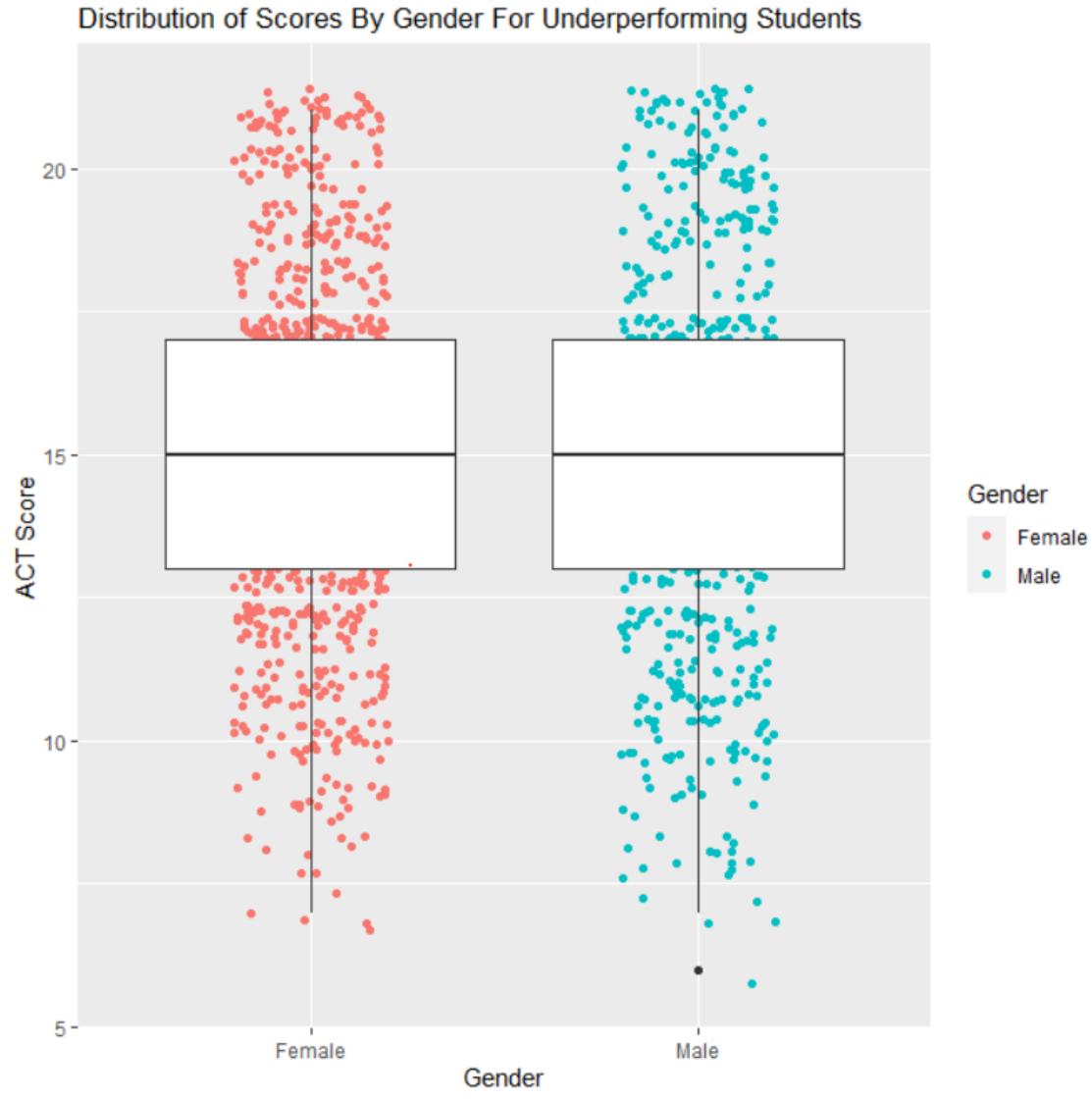
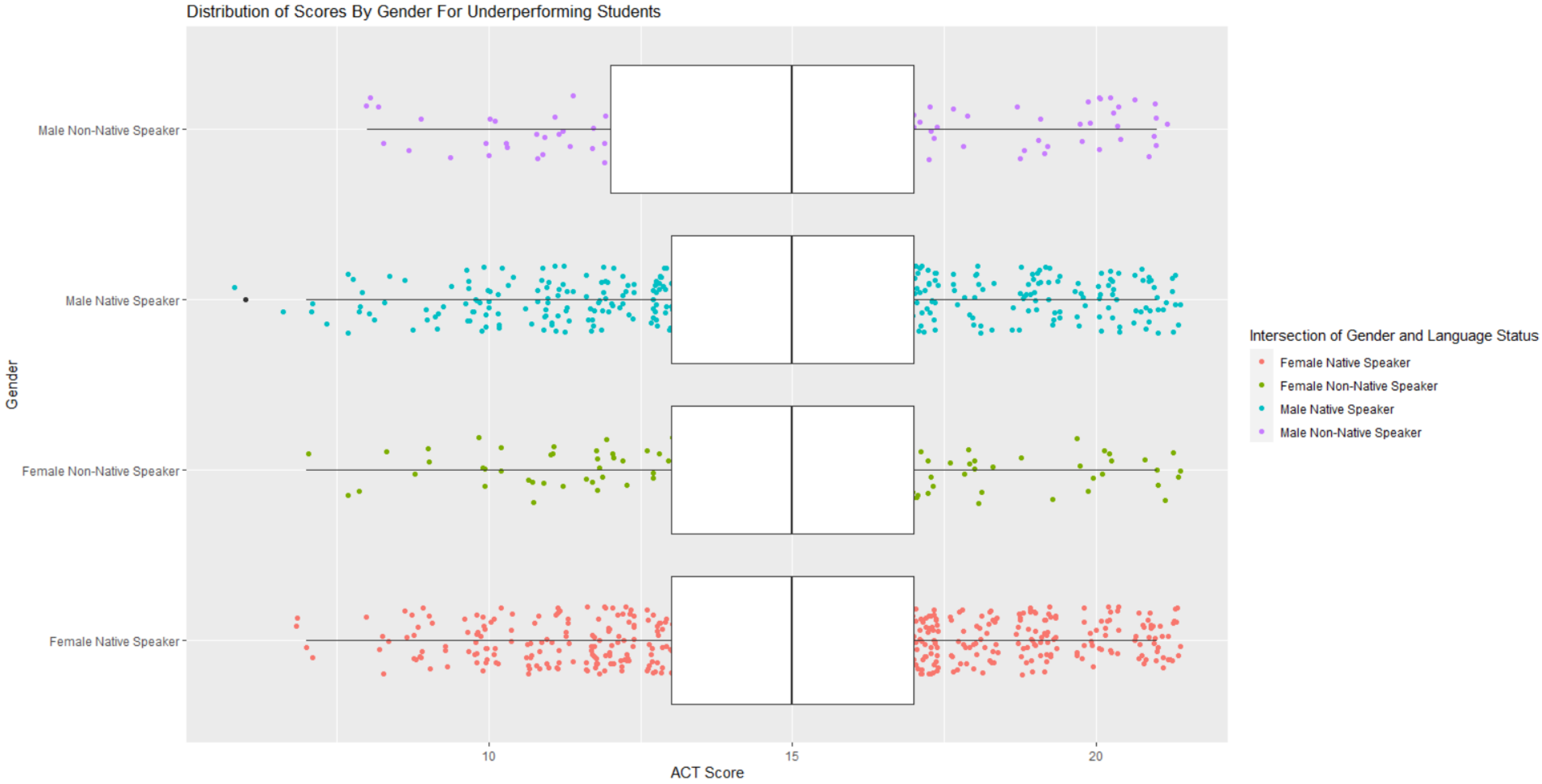
School 458
School 457
School 456
School 455
School 453
School 452
School 451
School 450
0
200
400
600
Count of Students

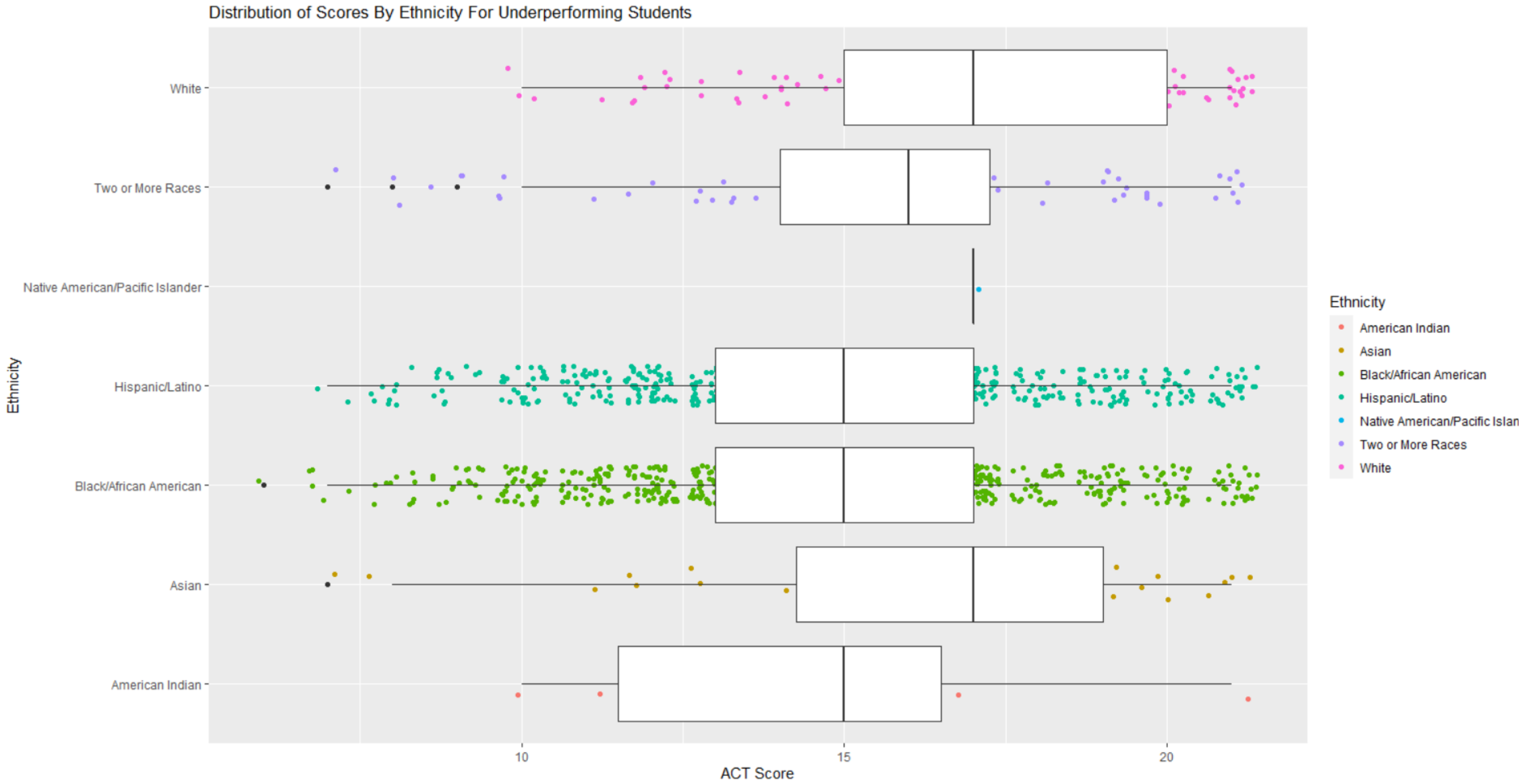
Case Study: School 452

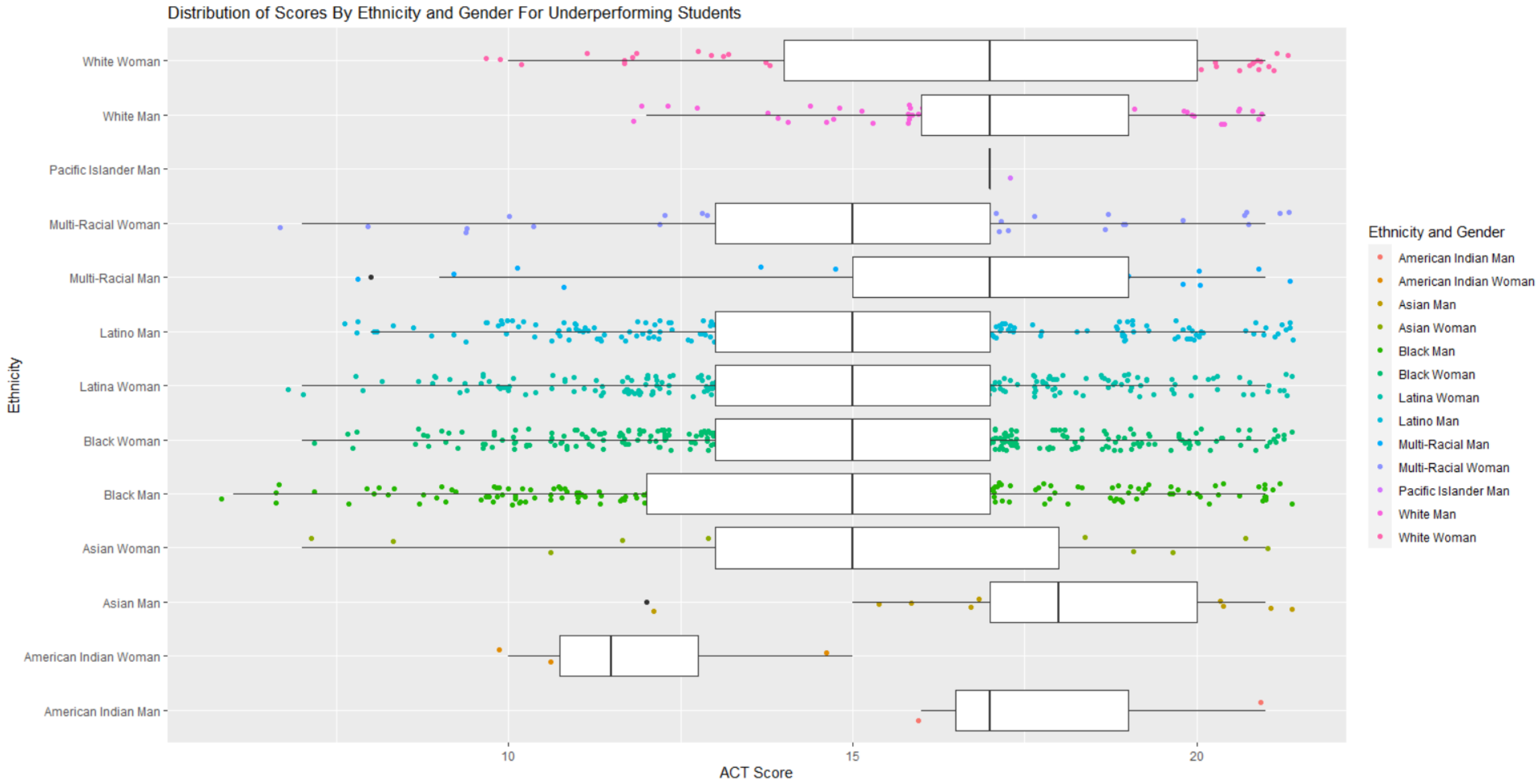



Distribution of Scores By Language Status For Underperforming Students
ACT Scores
20
15
10
Native Speaker
Non-Native Speaker
Langague Status
Langauge Status
Native Speaker
Non-Native Speaker


Distribution of Scores By Gender For Underperforming Students
ACT Score
20
15
10
5
Female
Male
Gender
Gender
Female
Male


Distribution of Scores By Gender For Underperforming Students
Male Non-Native Speaker
Male Native Speaker
Female Non-Native Speaker
Female Native Speaker
Gender
10
15
20
ACT Score
Intersection of Gender and Language Status
Female Native Speaker
Female Non-Native Speaker
Male Native Speaker
Male Non-Native Speaker


Distribution of Scores By Ethnicity For Underperforming Students
White
Two or More Races
Native American/Pacific Islander
Hispanic/Latino
Black/African American
Asian
American Indian
Ethnicity
10
15
20
ACT Score
Ethnicity
American Indian
Asian
Black/African American
Hispanic/Latino
Native American/Pacific Islan
Two or More Races
White


Distribution of Scores By Ethnicity and Gender For Underperforming Students
Ethnicity
White Woman
White Man
Pacific Islander Man
Multi-Racial Woman
Multi-Racial Man
Latino Man
Latina Woman
Black Woman
Black Man
Asian Woman
Asian Man
American Indian Woman
American Indian Man
10
15
20
ACT Score
Ethnicity and Gender
American Indian Man
American Indian Woman
Asian Man
Asian Woman
Black Man
Black Woman
Latina Woman
Latino Man
Multi-Racial Man
Multi-Racial Woman
Pacific Islander Man
White Man
White Woman

Regression Analysis

- Probit Model
  - Binary dependent variable
- Dependent Variable is if a student was prepared based on threshold values
- Interaction Terms Not included due to VIF

term	estimate	std.error	statistic	p.value
(Intercept)	-0.327171492	0.06935735	-4.7171858	2.391293e-06
Gen	-0.003139008	0.01117432	-0.2809127	7.787773e-01
CDE_ETHNICCODE2	0.510187878	0.07332067	6.9583086	3.443823e-12
CDE_ETHNICCODE3	0.054230622	0.06903735	0.7855259	4.321453e-01
CDE_ETHNICCODE4	0.065985244	0.06827178	0.9665083	3.337899e-01
CDE_ETHNICCODE5	1.027477270	0.06912059	14.8649962	5.561805e-50
CDE_ETHNICCODE6	0.424849103	0.14872980	2.8565163	4.283180e-03
CDE_ETHNICCODE7	0.593062840	0.07439196	7.9721360	1.559550e-15
Home_Prim_Lang	0.017123077	0.01438642	1.1902251	2.339579e-01

Recommendations

- Macro
  - Focus on investment and initiatives with Mathematics and Reading
  - Mean scores still below benchmarks and with Mathematics showing the least progress
- Network
  - Big achievement gap with High School Network and Chart with other networks
  - Denver Submit and West Denver English scores are concerning and require intervention
  - Intensive Pathways network lost gains in recent years and is performing less well
    - Requires intervention starting with a focus on English skills
- School
  - 450's High Schools are generally underperforming
  - Schools generally appear to be struggling with Mathematics
    - Future policy should be tailored for this general need considering the macro view of the district

- Individual – School 452 Case Study
  - Male Non-Native English Speakers and American Indian Woman are the most vulnerable demographics and may require additional support
  - Secondary demographics of concern would be black men as the tails of their distribution were rather long
  - There is a gap between male and female Asian students that is concerning
    - It may be useful to organize female empowerment programming to target this gap as it may be culturally based
      - Pronounced in Native American and Asian demographics