

Examining Factors that Affect Student Performance

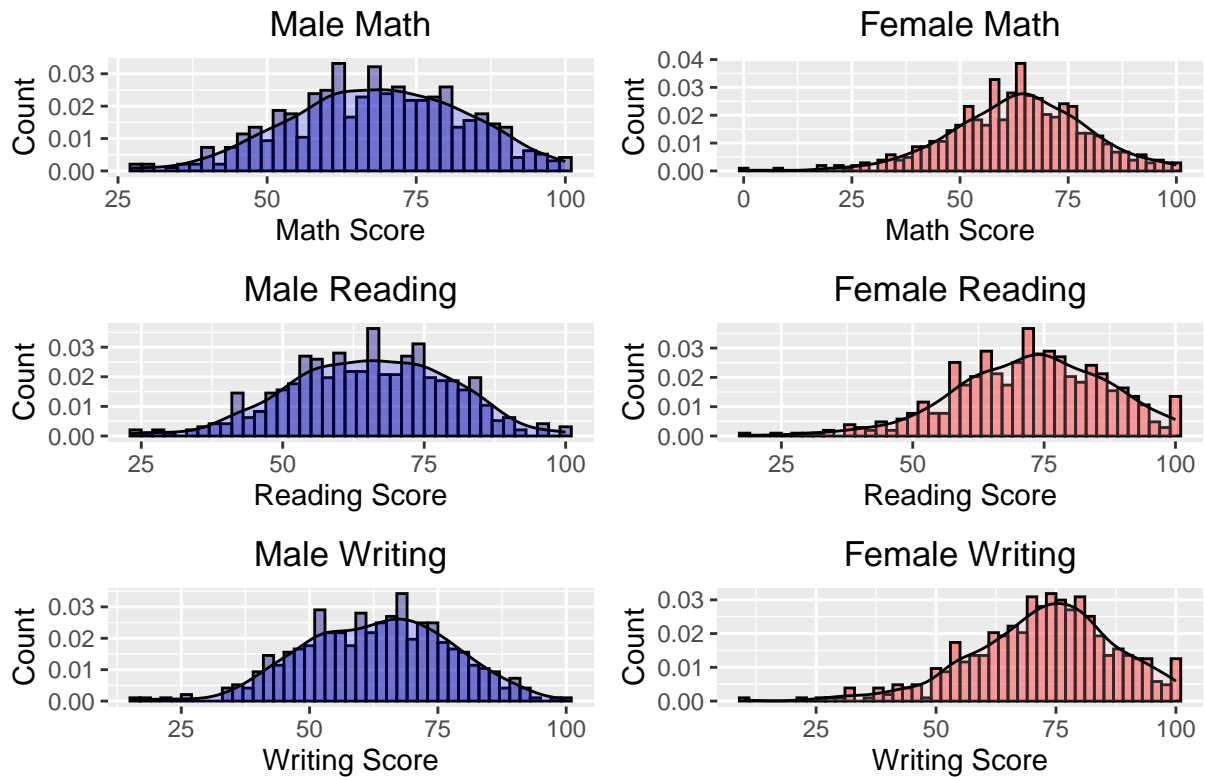
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The goal of this project is to gain insight on classroom performance. We will begin with a series of visualizations and conclude with a predictive model.

We will first examine the distribution of subject specific scores across gender.

Distribution of Scores across Gender



Mean Scores

| Gender | Math | Reading | Writing |
|--------|-------|---------|---------|
| Male | 68.73 | 65.47 | 63.31 |
| Female | 63.63 | 72.61 | 72.47 |

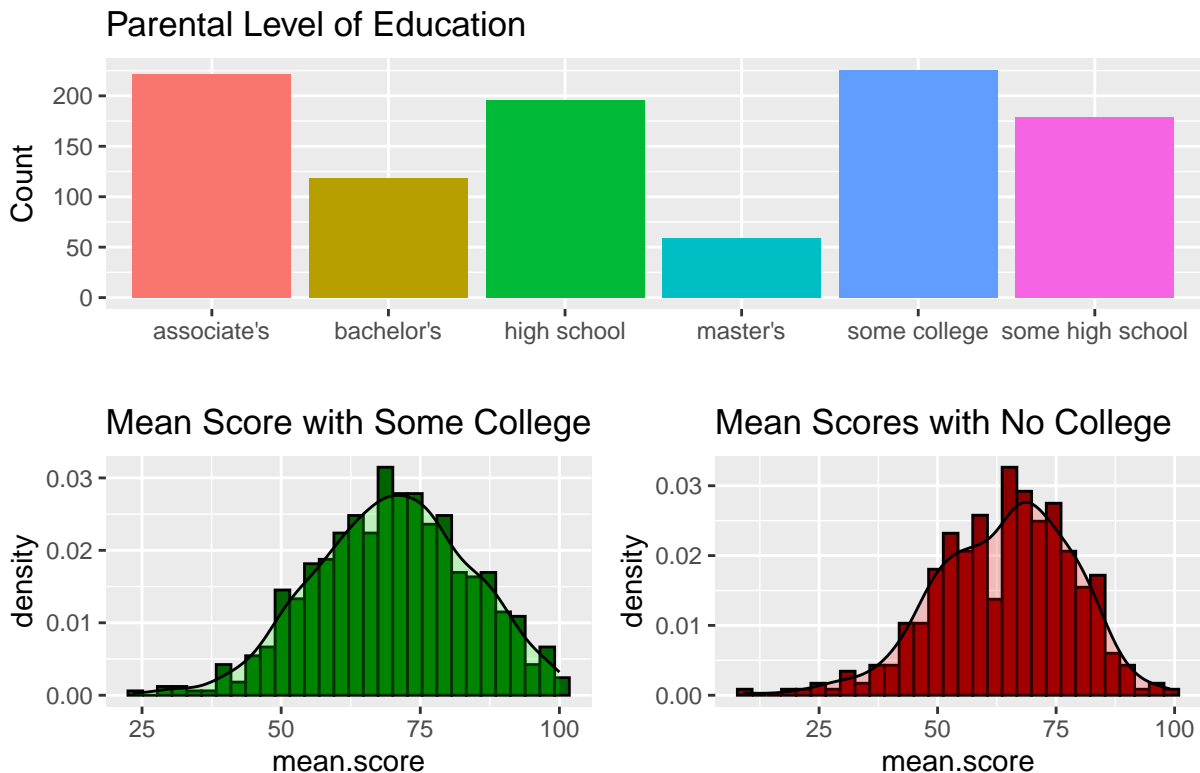
There are some interesting conclusion we can make:

- Male's tend to score higher in Math.
- Female's tend to score higher in Reading and Writing.
- The distribution for the male group is relatively normal while the distribution for the female group is skewed to the right.

Next, we want to look at the effect of parental level of education on subject scores.

| parental.level.of.education | n | percent |
|-----------------------------|-----|---------|
| associate's | 222 | 22.2 |
| bachelor's | 118 | 11.8 |
| high school | 196 | 19.6 |
| master's | 59 | 5.9 |
| some college | 226 | 22.6 |
| some high school | 179 | 17.9 |

Distribution of Mean Scores & Some College vs. No College

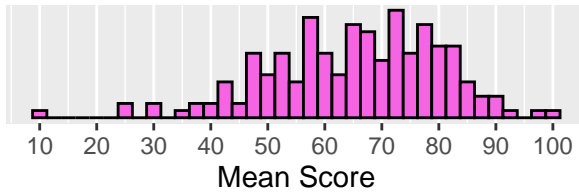


There are a few things to notice:

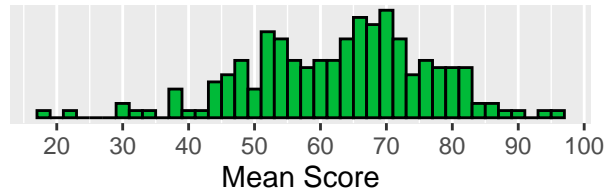
- Most students have parents who achieved some level of college (65.7%).
- The median score for students whose parents achieved some level of college is 70.3%.
- The median score for kids whose parents did not reach college is 65.7%.

Distribution of Mean Scores across Parental Education Level

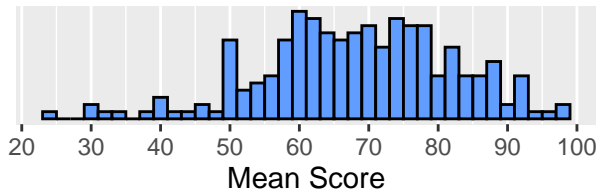
Some High School



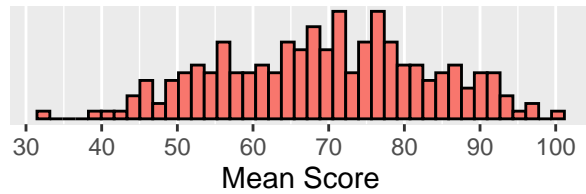
High School



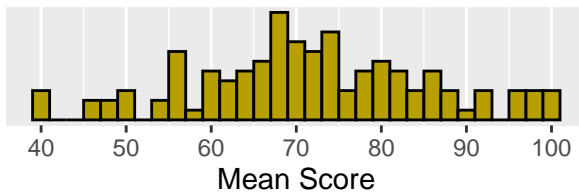
Some College



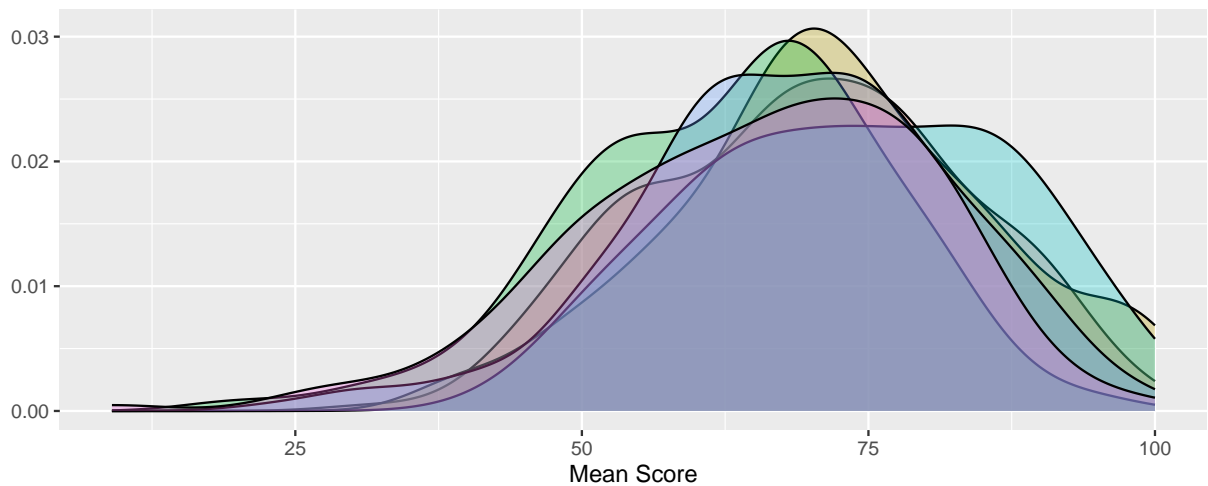
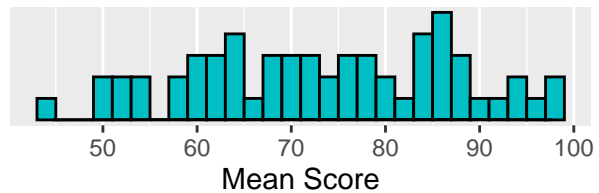
Associate's Degree



Bachelor's Degree



Master's Degree



We see that student's whose parents achieved beyond a bachelor's degree are more likely to score beyond 80%. On the other hand, student's whose parents did not attend college are more likely to score below 60%. Otherwise, it appears to be difficult to differentiate between different levels of parental education.