

# PROJECT I

University of Richmond, DA bootcamp  
May 2020





## INSPIRATION

Attending Kindergarten is not a requirement of all states. Our project will seek to discover how children's performance in the states that require kindergarten compare to the performance of children in the states that do not require kindergarten attendance.





## ASSUMPTIONS

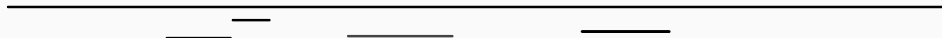
- ✓ Data is normally distributed
- ✓ Data is independent
- ✓ Data is homogenous (The standard deviations are roughly equal)





# HYPOTHESIS

Attending kindergarten results in higher test scores and graduation rate.





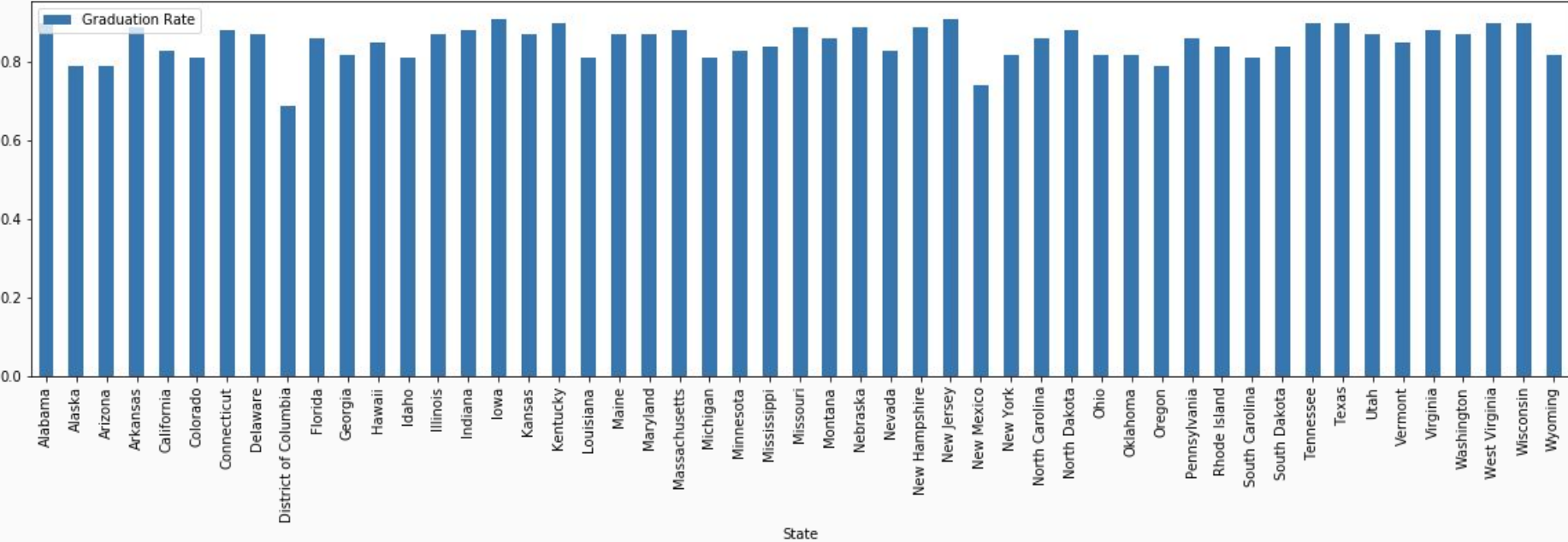
## DEFINITION OF SUCCESS

We looked at 4th and 8th grade national test results as benchmark indicators of success as well as successful completion of 12th grade or graduation rates.

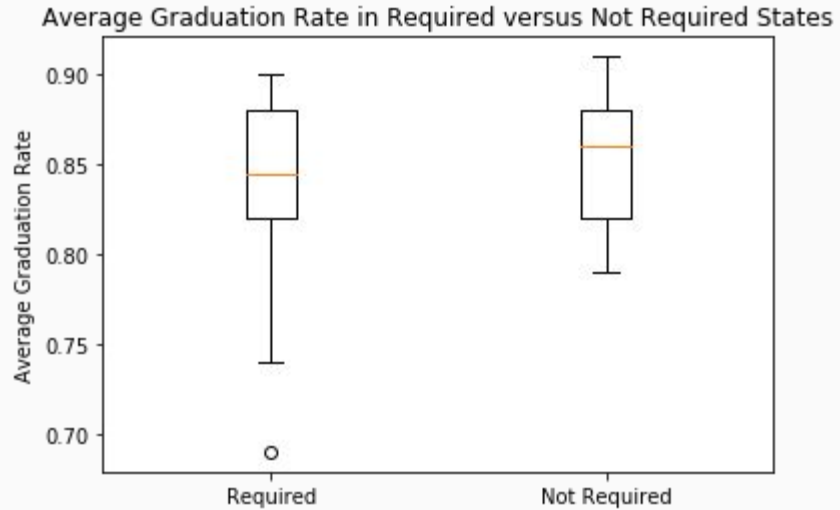


# RESULTS ANALYSIS

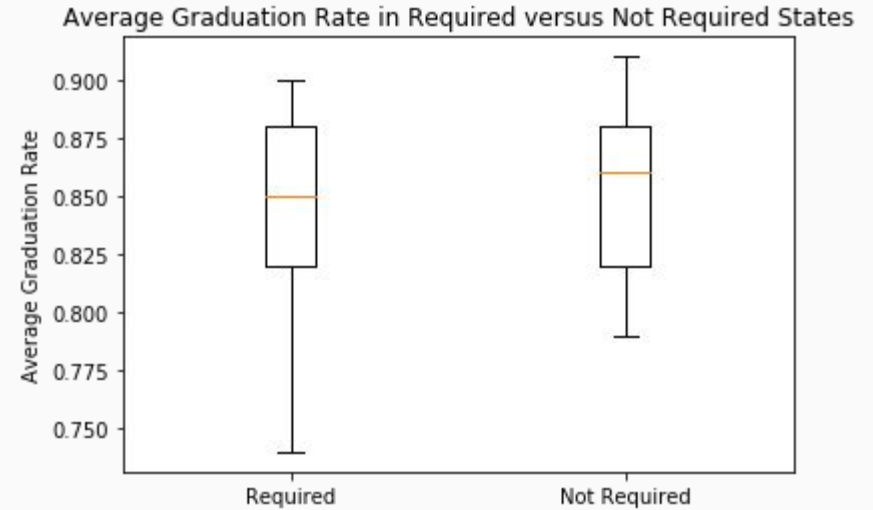
Graduation Rates by State



## RESULTS ANALYSIS



*The p value = 0.27*



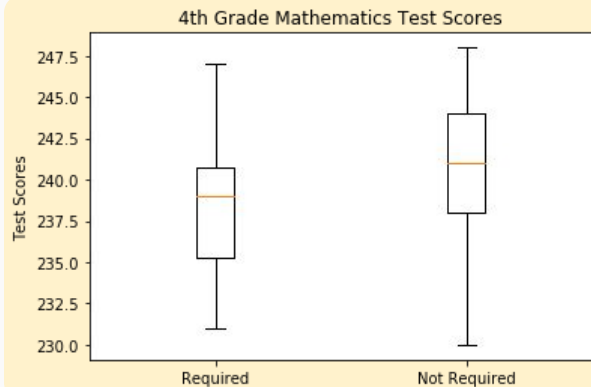
*The p value = 0.63*

## RESULTS ANALYSIS

### 4th Grade Math

$p = 0.026054855644176138$

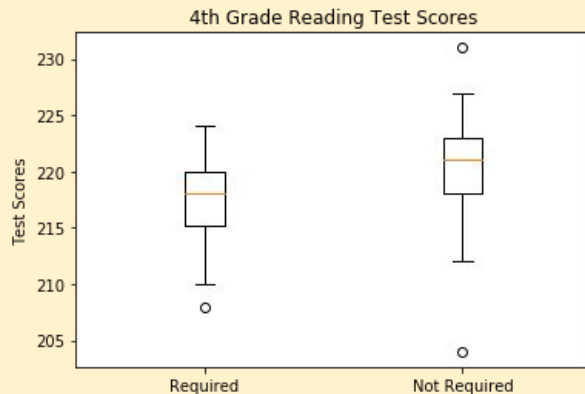
The difference is statistically significant



### 4th Grade Reading

$p = 0.0390621255330835$

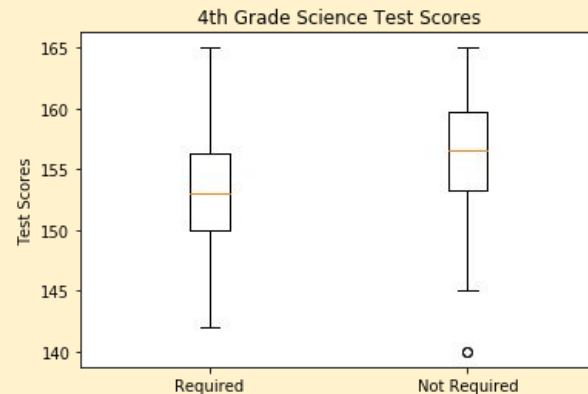
The difference is statistically significant



### 4th Grade Science

$p = 0.1250185924842891$

The difference is not statistically significant



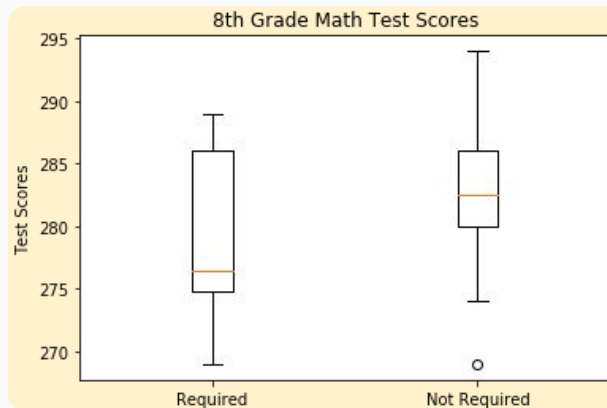


## RESULTS ANALYSIS

### 8th Grade Math

$p = 0.03255688551735612$

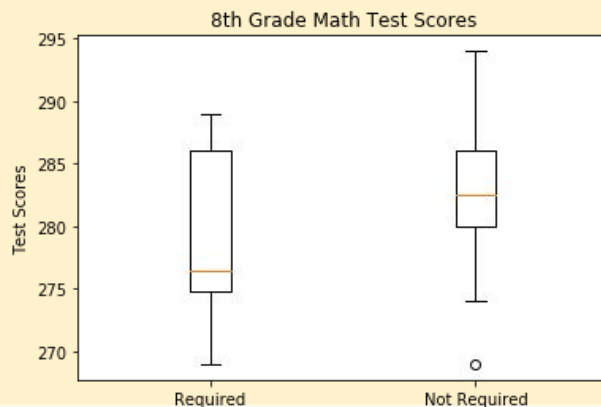
The difference is statistically significant



### 8th Grade Reading

$p = 0.025667799874275015$

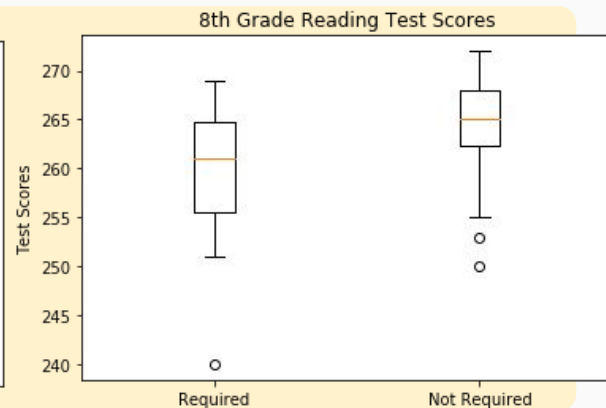
The difference is statistically significant



### 8th Grade Science

$p = 0.08518732218432806$

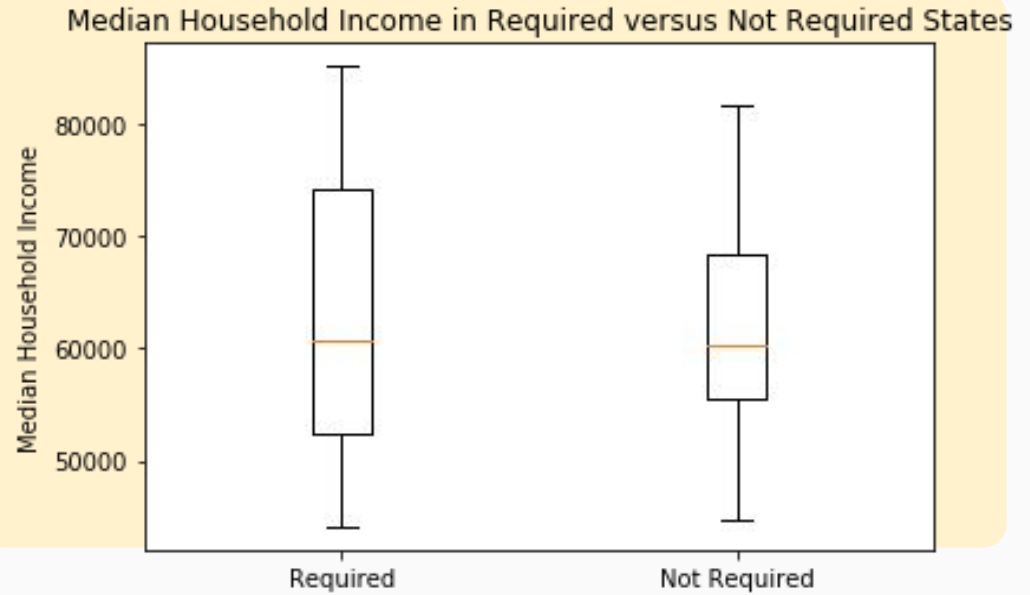
The difference is not statistically significant



## RESULTS ANALYSIS

$p = 0.6960794922184232$

The difference is not statistically significant





## CONCLUSION

We found our original hypothesis to be false. Our assumption that kindergarten attendance correlated to higher performance was incorrect. We found that on average students in states that did not require kindergarten had similar graduation rates but higher test scores in both math and reading. However this correlation could imply that going to kindergarten results in a lower performance. Further testing would need to be done to tell us whether this correlation is coincidental or causal.



## RESOURCES

### DATASETS

- [High school graduation rates 2018](#)
- [Kindergarten State Requirements 2018](#)
- [National Assessment of Educational Progress](#)
- [Median Household Income in the United States 2018](#)

### PARTICIPANTS

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