

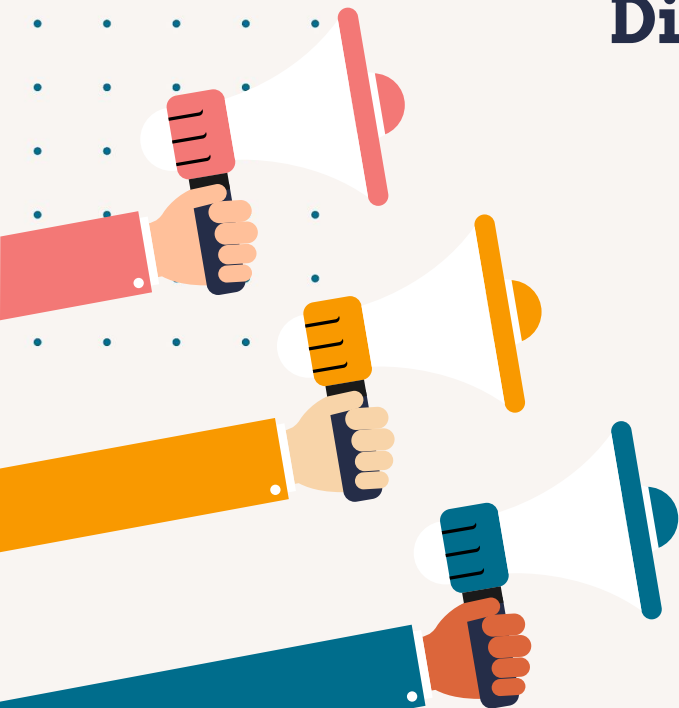
Demystifying the Digital Divide

Analyzing the Digital Divide and Student Outcomes



Diminish the Divide:

Goal: Predict the impact of the digital divide on district-level educational outcomes in the United States.



Summary



01 BUSINESS UNDERSTANDING

Why the digital divide, why education, and why now?

02 DATA UNDERSTANDING

What data will help us solve this problem?

03 PREDICTIVE ANALYSIS

What tools do we have to analyze this data?

04 CONCLUSION

...so what now?

Business Understanding

Contextualizing COVID19 Coronavirus

Virus forces virtual learning...

Defining Digital Divide

*...requiring internet AND device access,
which not all students have...*

Assessing Academic Achievement

*...which negatively impacts their academic
performance.*



Contextualizing COVID19 Coronavirus

124,000

Number of schools closed nationwide

\$ 13.2 Billion

Amount districts should have available for School
Tech

12,00,000

Students without access to internet



Defining the Digital Divide

INTERNET ACCESS



DEVICE ACCESS

%%%

%%%



Assessing Academic Achievement

MATH

Percent Proficient by District



READING /
LANGUAGE ARTS

Percent Proficient by District



%%%



%%%



COMPOSITE

Combined to create 1 variable to
predict

%%%



Data Understanding



Census Data

American Community Survey 5-year Estimates
2018 Estimates

Dept of Education Data

ED*Facts* Annual State Assessments
2017-18


Data Limitations

Strategies for Mitigation



Census Data

American Community Survey
5-year Estimate 2018



Percent Estimates

(unless otherwise noted):

1. 1 or more computers
2. Access to broadband
3. Poverty Ratio
4. White
5. Adults w/ Bachelor's
6. Median Income (\$ Estimate)
7. Median Rent (\$ Estimate)
8. Unemployment
9. Home Language Not English
10. Disability



Dept. of Ed Data

ED*Facts* State Assessments
Math & Reading/Language Arts Assessment
2017-18



Percent Estimates

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Predictive Analysis

Model Selection

Model Evaluation

Feature Importances



Conclusion

Recommendations for Relieving the Rift

What have we learned?

Additional Areas for Analysis

How can we learn more?

Thoughts and Thanks

What did I miss?



Recommendations

How to use this model

EXAMPLE: Bring this model to your state / local government to pinpoint and emphasize the impact on your district

Baseline

Use this model as a baseline for future analyses to continue bridging the resource gap



Thoughts?



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Thanks!