

Distance Learning: Advising at Scale

Harry Weaver



**Can we help students
understand what they need to
do to succeed?**





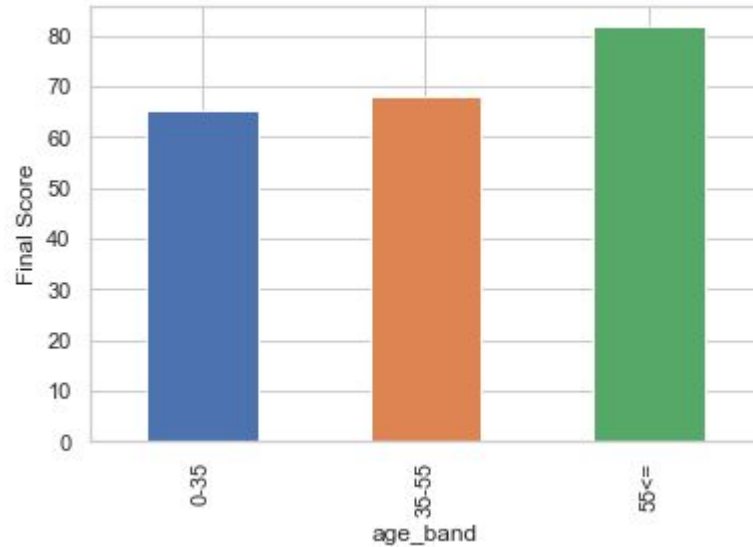
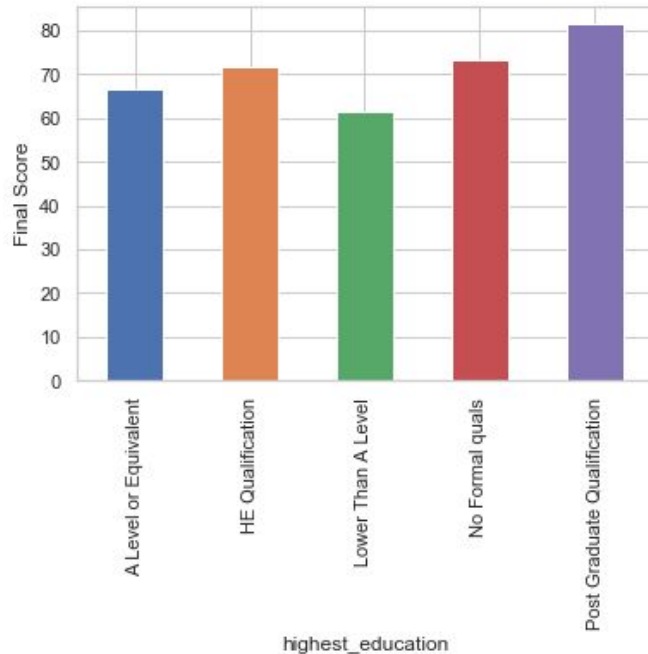
What affects student performance on a final?

Personal
Background and
Experience

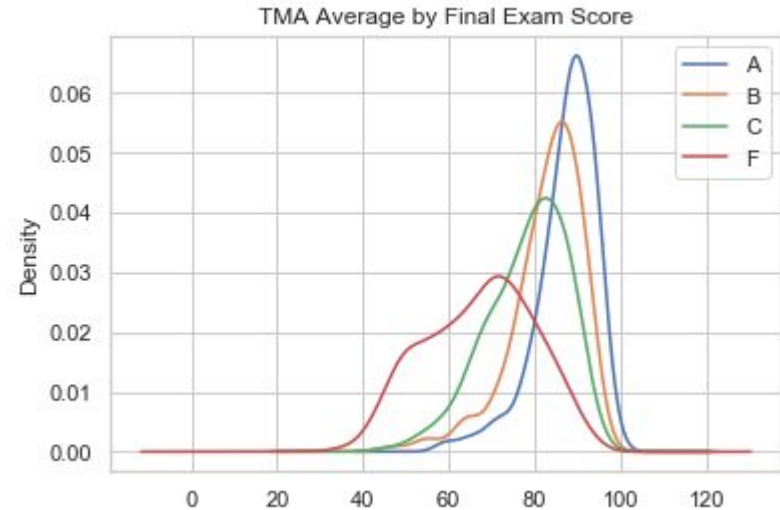
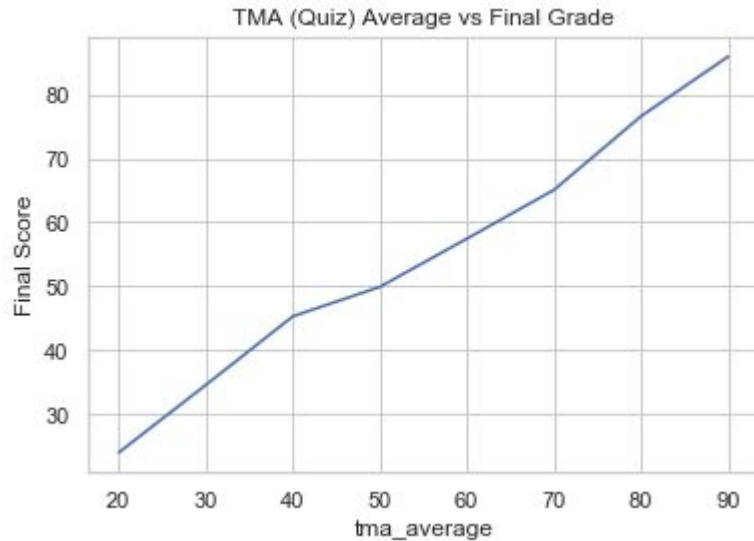
Class
Performance

Studying

Personal Background - Education and Age

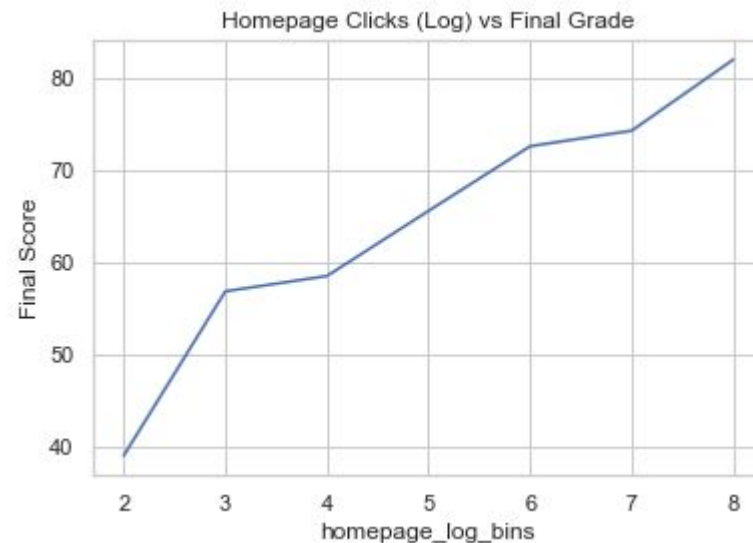
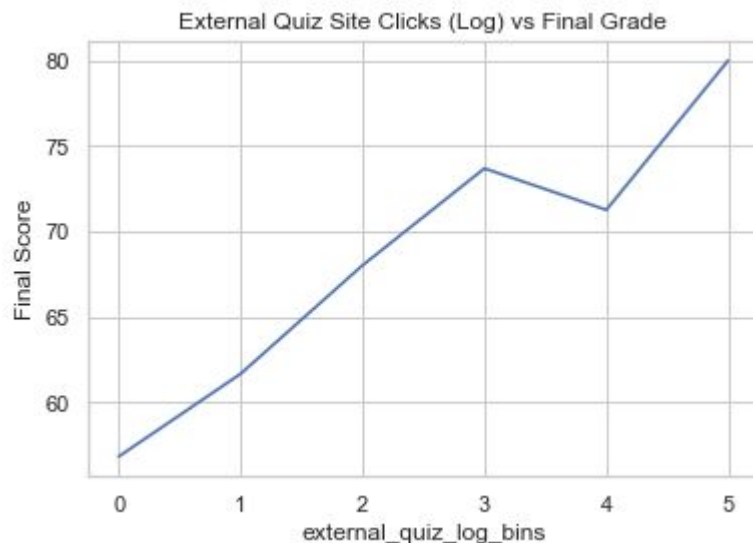


Past Performance correlates strongly to final exam performance





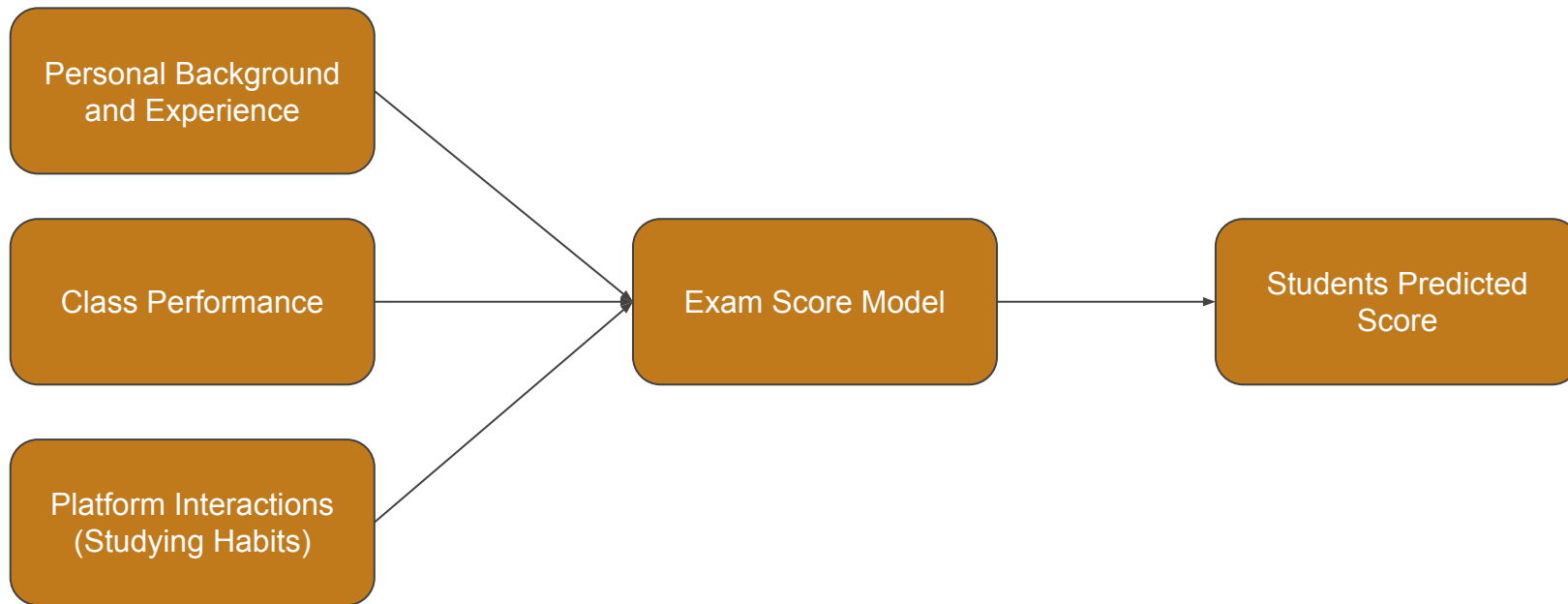
How much you study matters on your final grade



**Can we utilize a model to predict
how a student will do on the
final?**



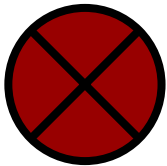
Model Design



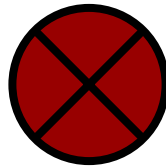


What can we potentially influence after all quizzes have been taken?

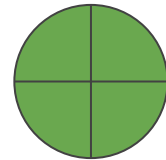
Personal
Background and
Experience



Class
Performance

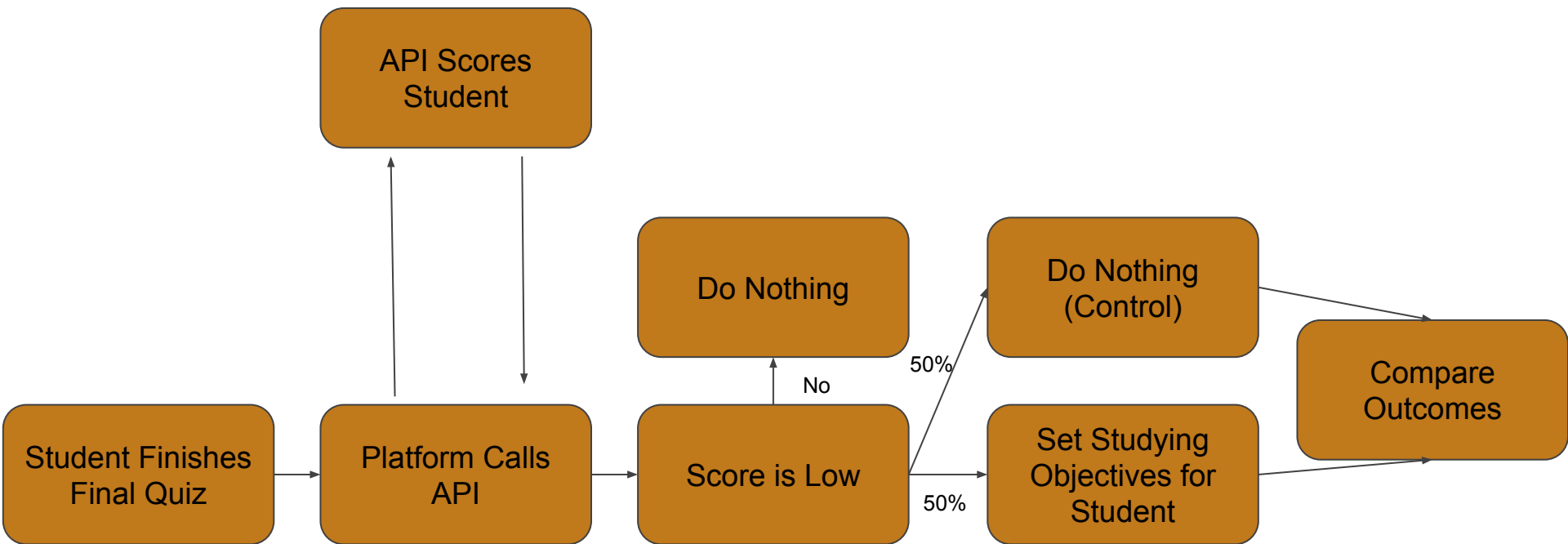


Studying



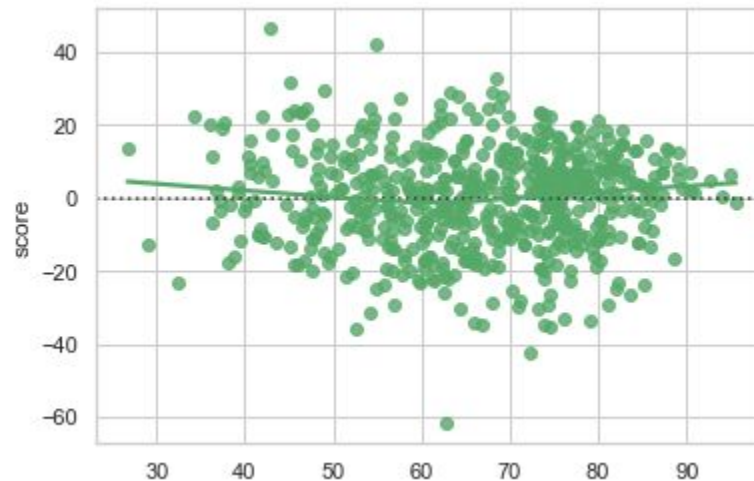
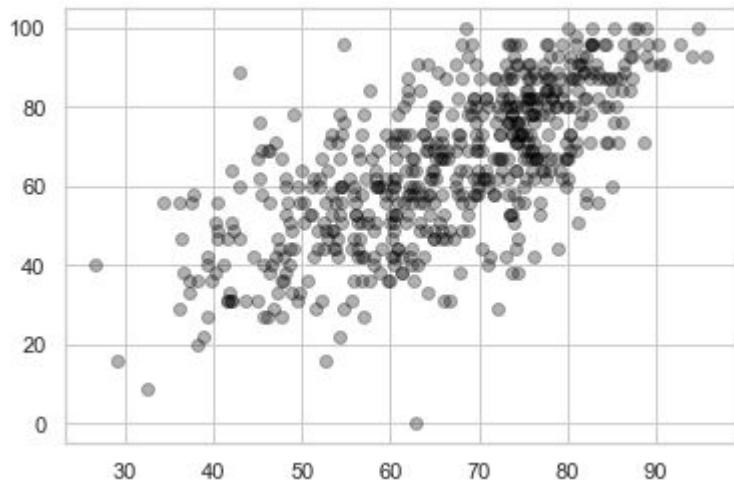


Experiment Design





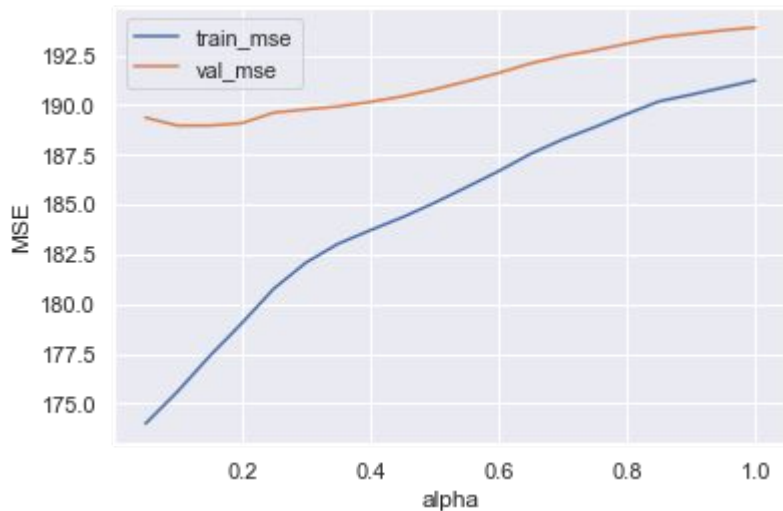
Lasso Regression



- .48 R Squared
- 189 MSE



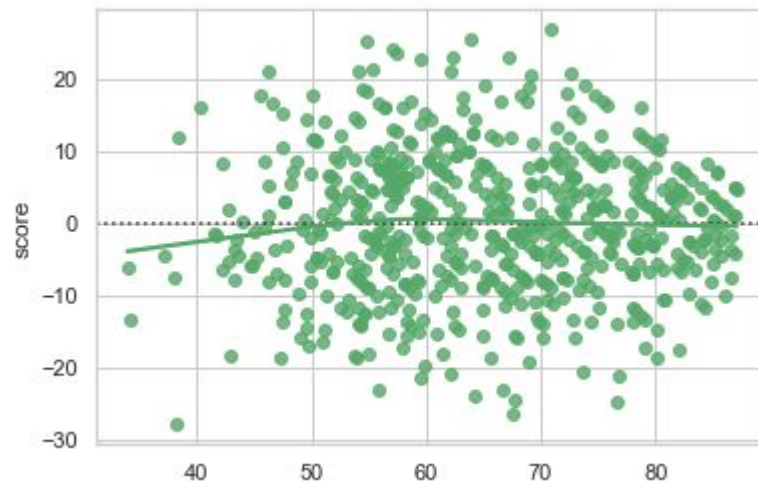
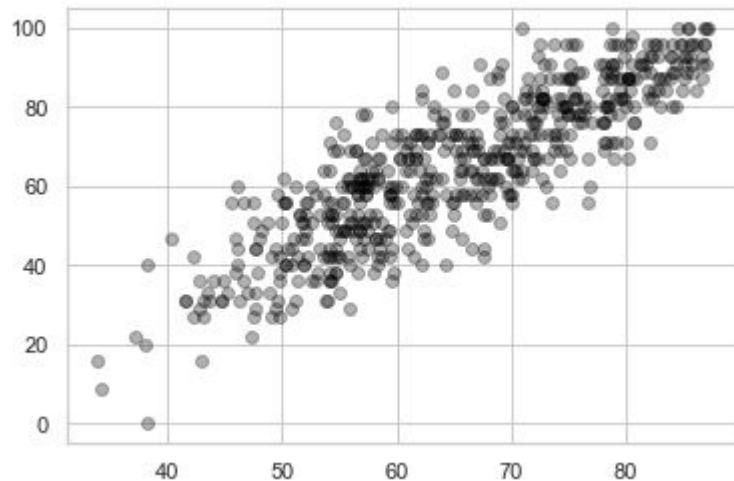
Lasso Regression



Category	Feature	Coefficient
Demographics	35-55	-9.75E-01
Demographics	HE Qualification	6.35E-01
Demographics	Lower Than A Level	-2.30E+00
Demographics	London Region	6.16E-01
Demographics	West Midlands Region	-1.59E-01
Studying	externalquiz (log)	1.32E+00
Studying	subpage (log)	7.99E-01
Past Performance	tma2	1.93E-02
Past Performance	tma4	2.24E-01



Gradient Boosting Regressor



- .68 R Squared
- 115 MSE



Next Steps

- Statistics to measure for the test
 - Pass Rate
 - Final Exam Score
- Design the strategy to communicate studying objectives to students
 - Email Campaign
 - On Screen Popup
 - Objective Progress Bar
- Implement and Measure