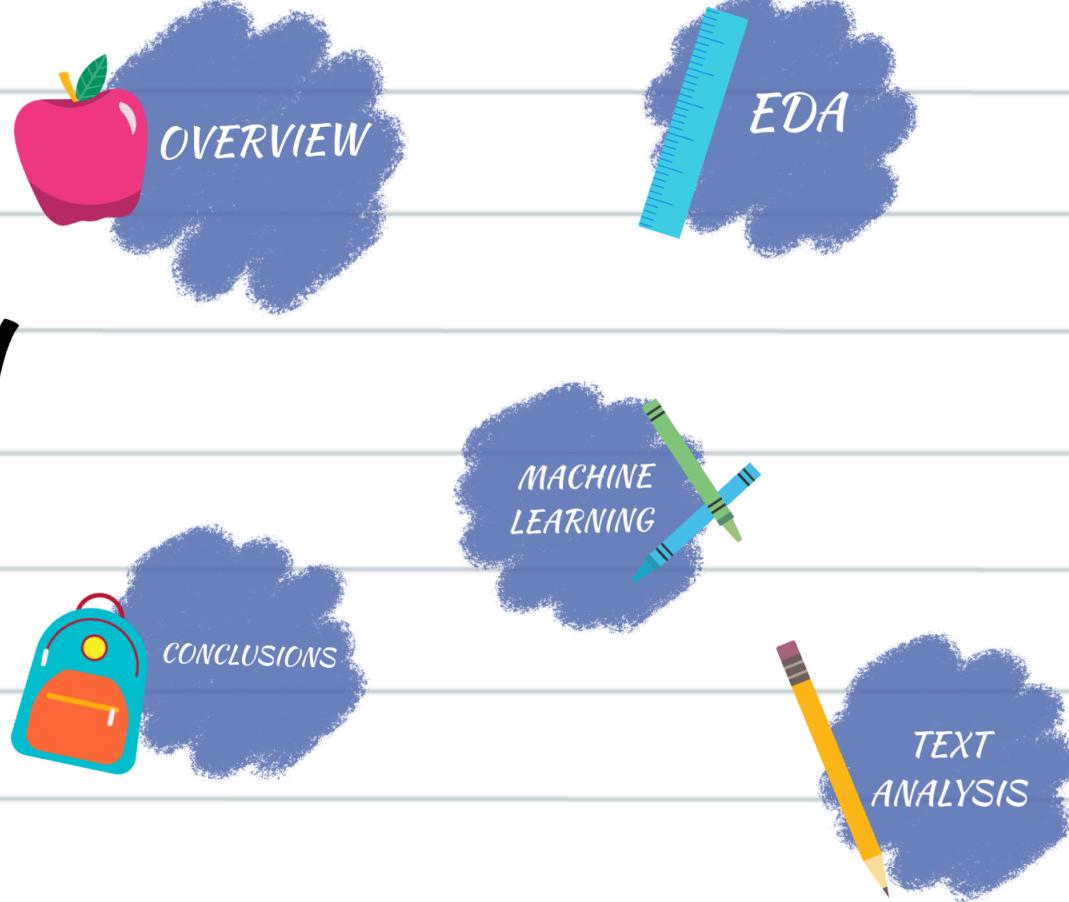


Practicum II

High School Behavior



Lee Wise
Regis University

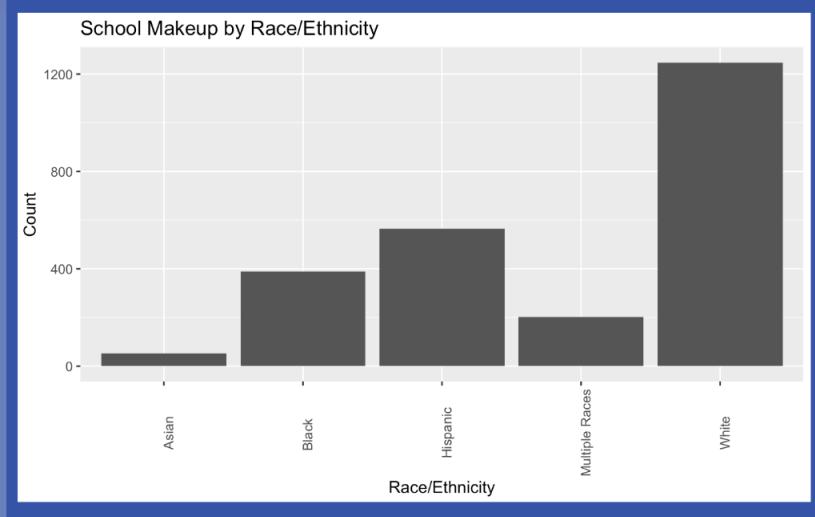


OVERVIEW

- 701 Behavioral Events
- 16,401 Grade Observations
- Attendance and Demographics
- Student Risk Categories

PROBLEM

Student Equity

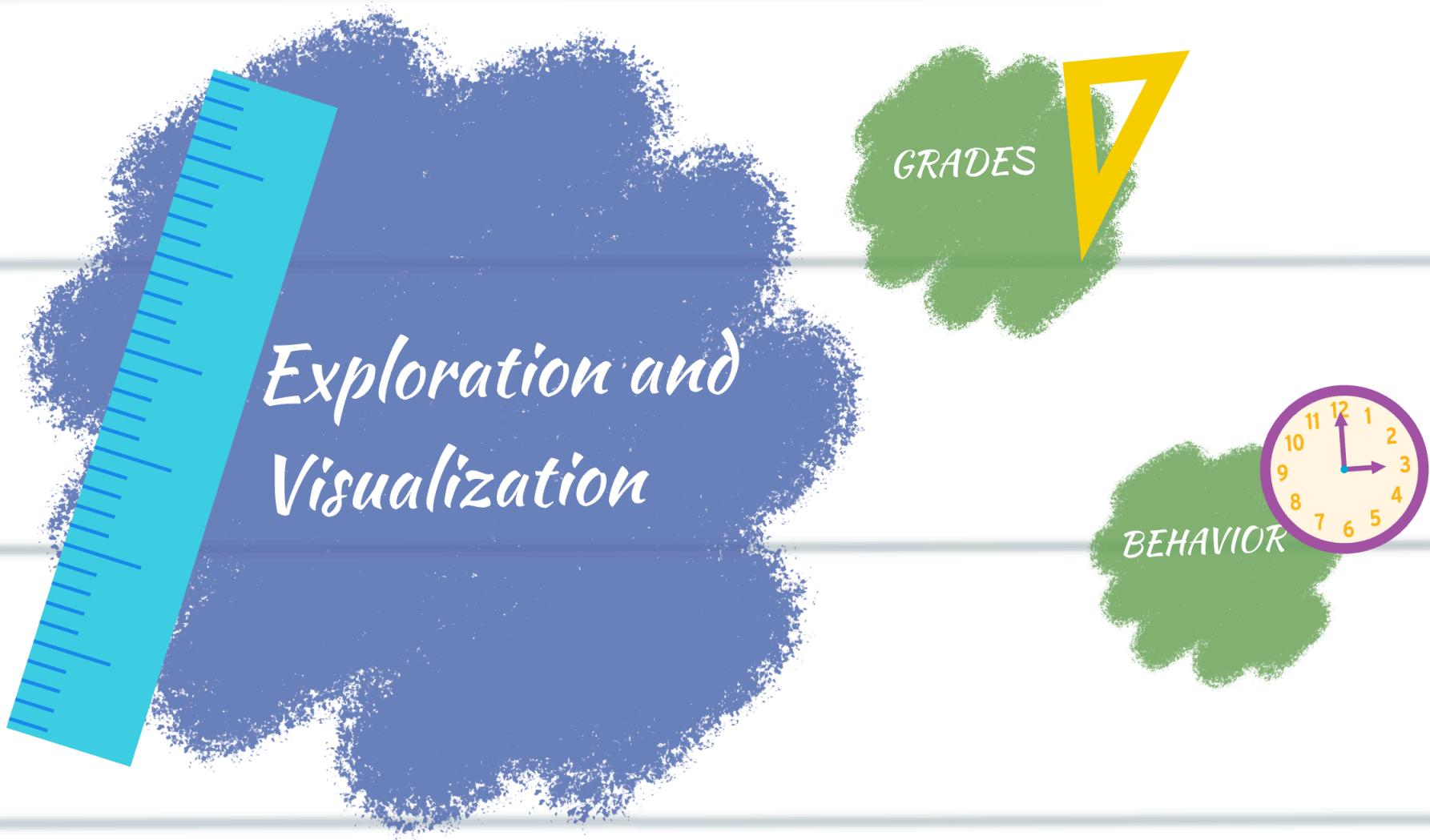


★ Violation Differences

★ Word Usage

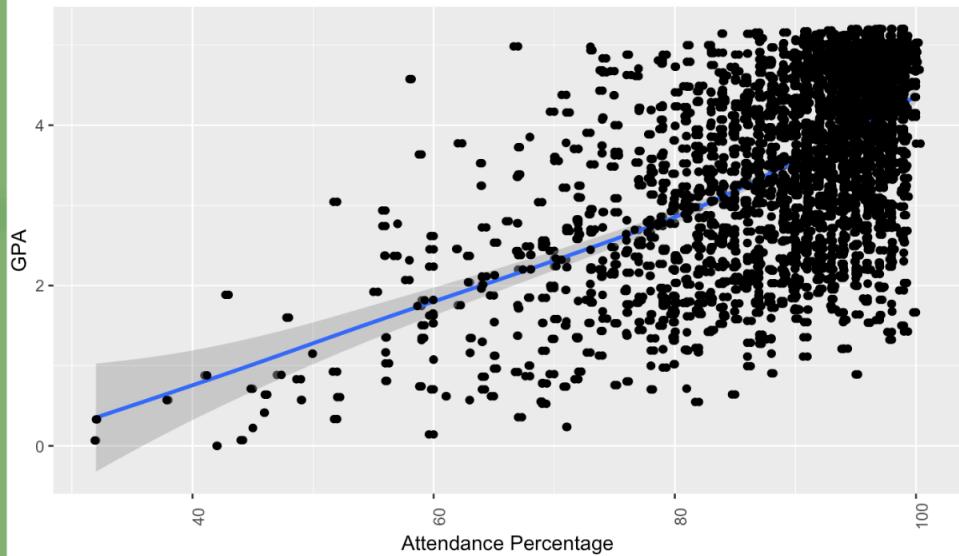
★ Grouping Students

Exploration and Visualization

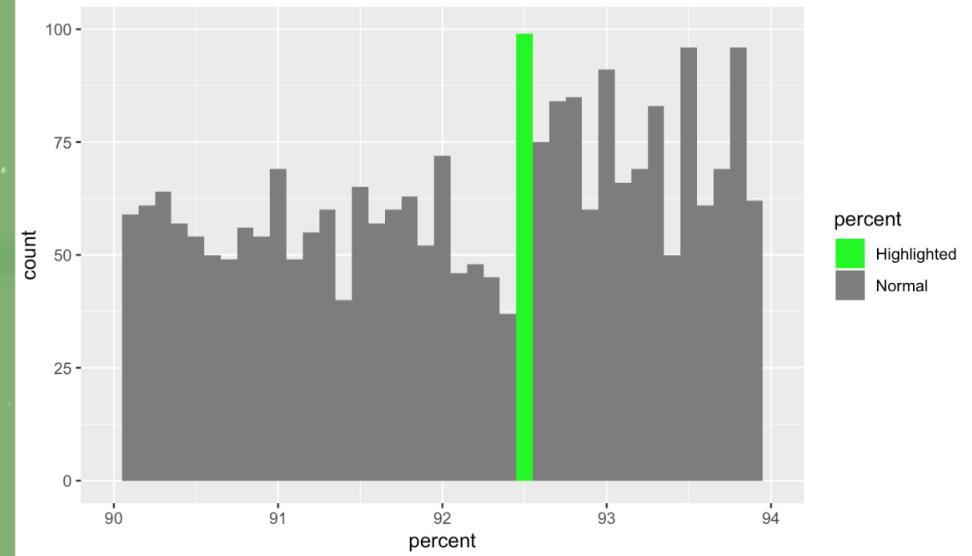


High School Grade Visualizations

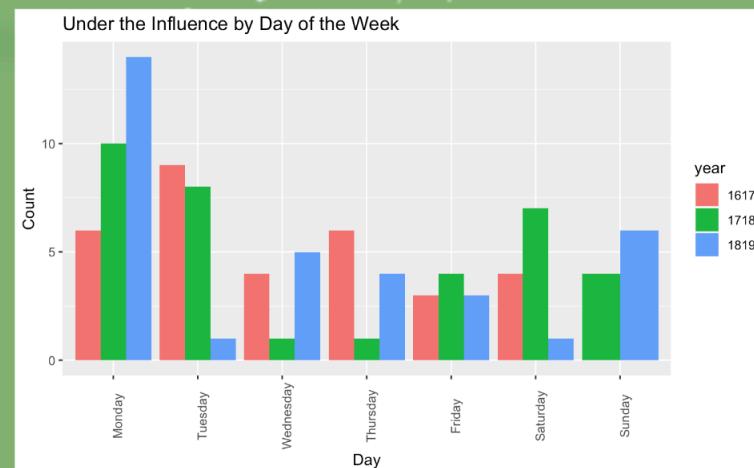
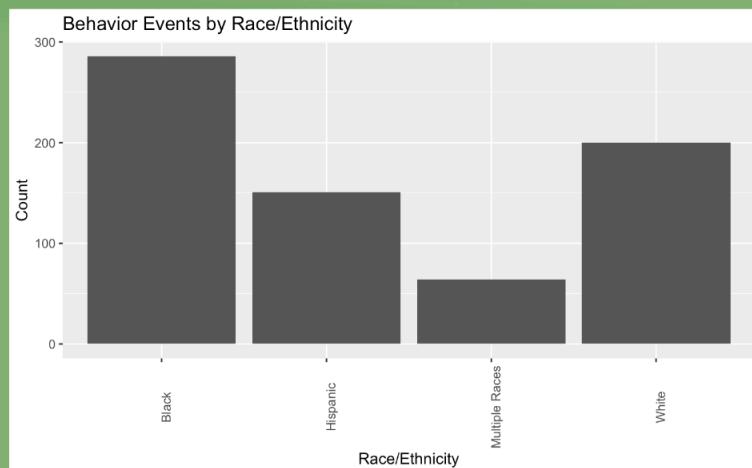
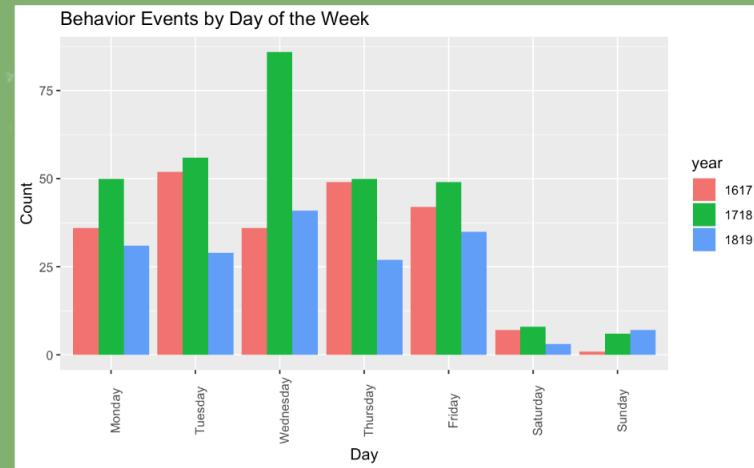
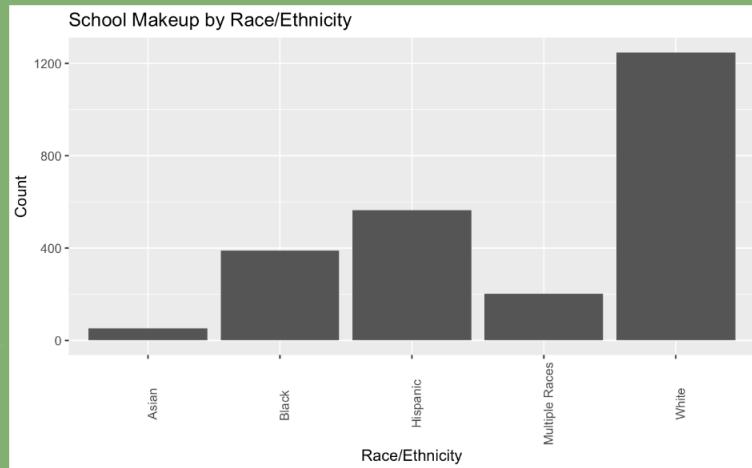
GPA vs. Attendance Percentage

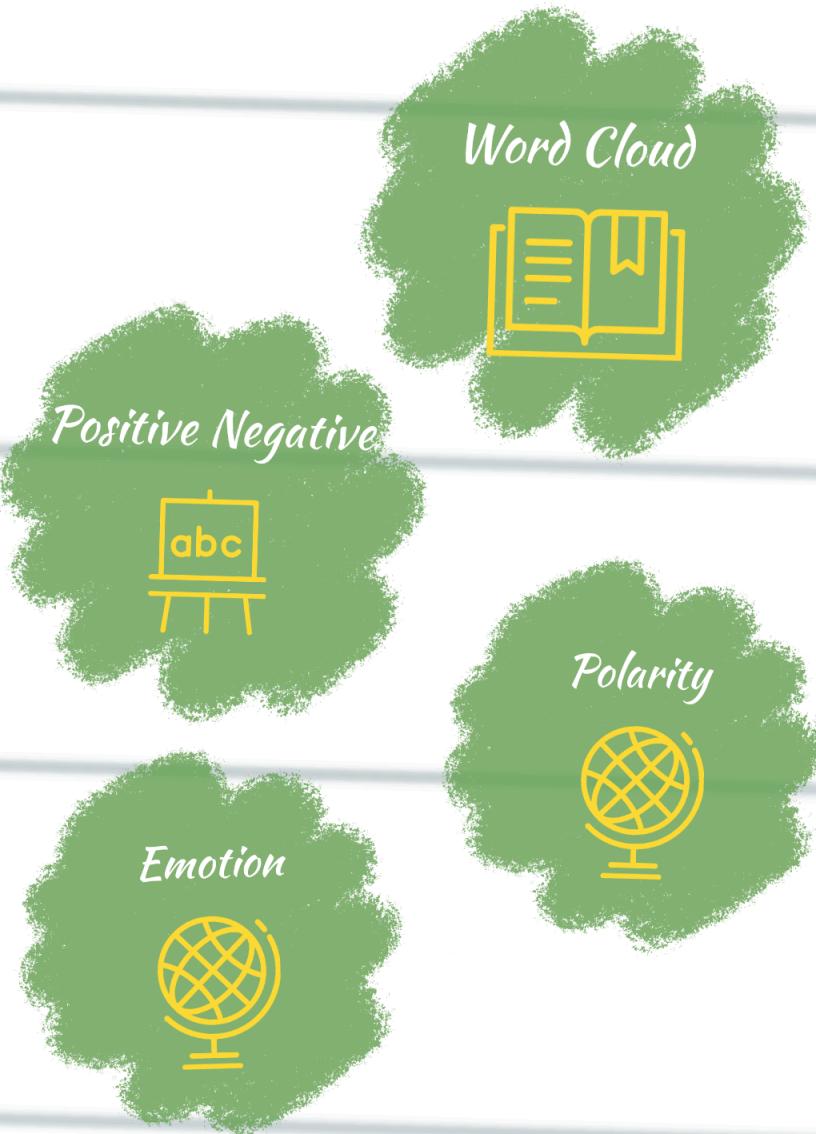
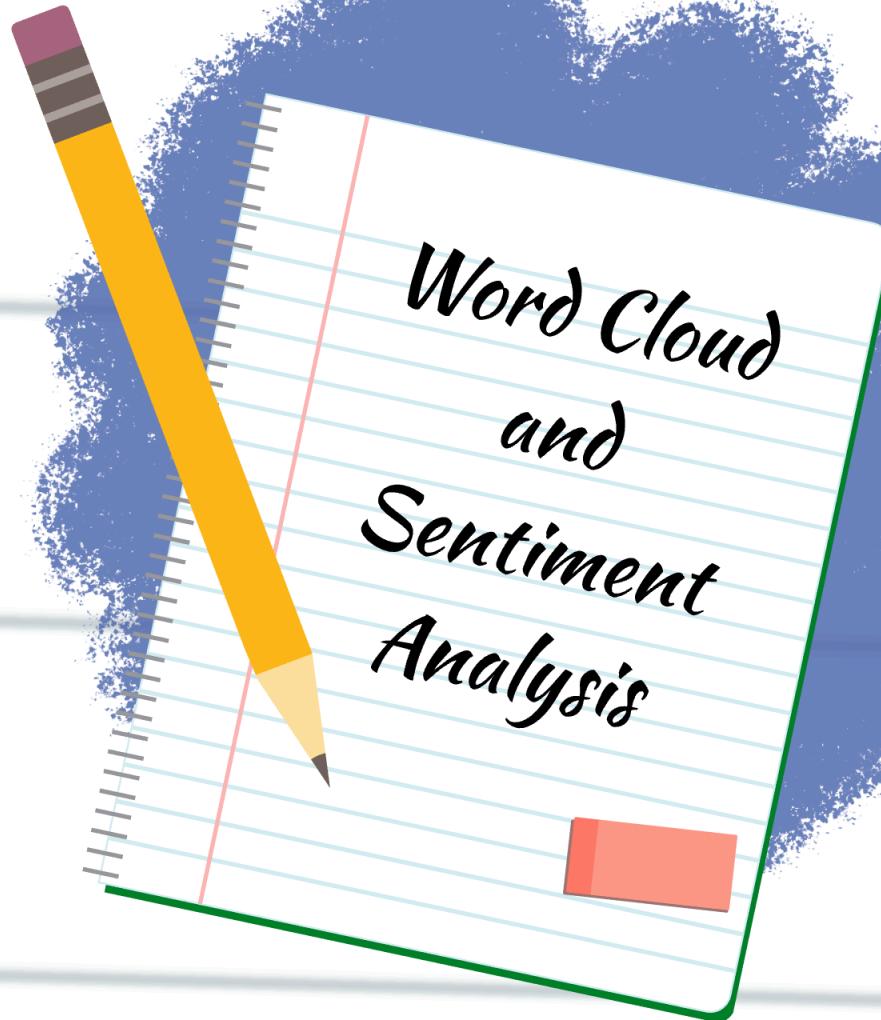


Grade Distribution



High School Behavior Visualizations





White Students

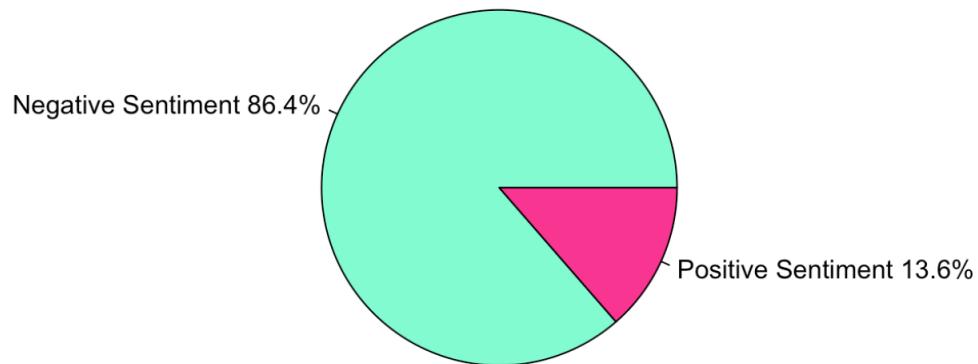
A word cloud centered around the word "influence". Other prominent words include "smoking", "possession", "marijuana", "alcohol", "misconduct", "drugs", "teacher", "student", "inappropriate", and "vaping". The words are colored in various shades of blue, green, yellow, and red, and are arranged in a circular pattern radiating from the center.

Mixed Race Students

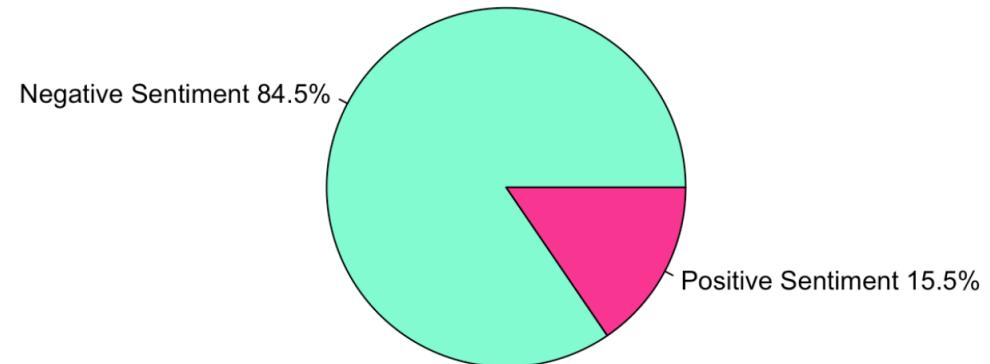
Hispanic Students

Black Students

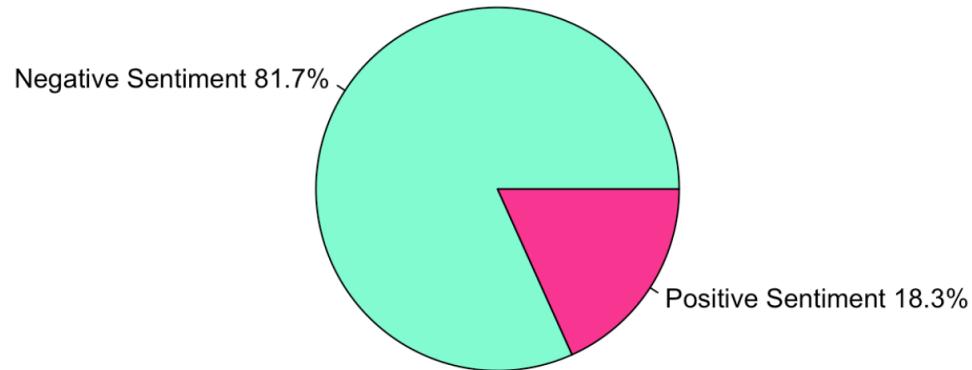
Sentiments for Hispanic Students



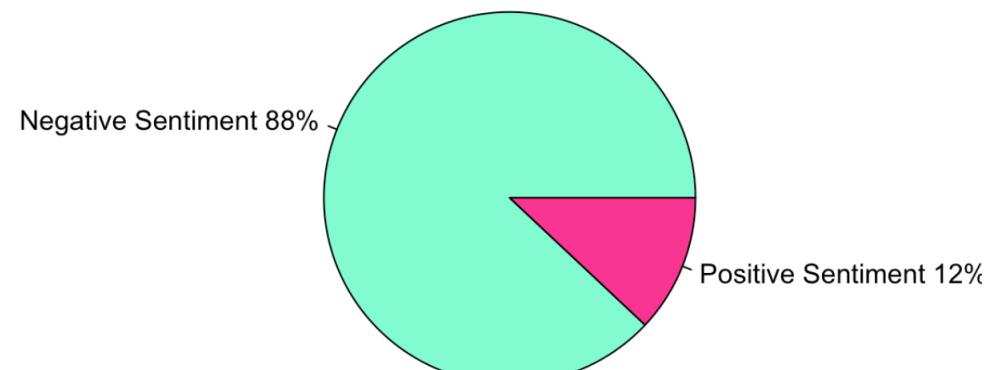
Sentiments for White Students

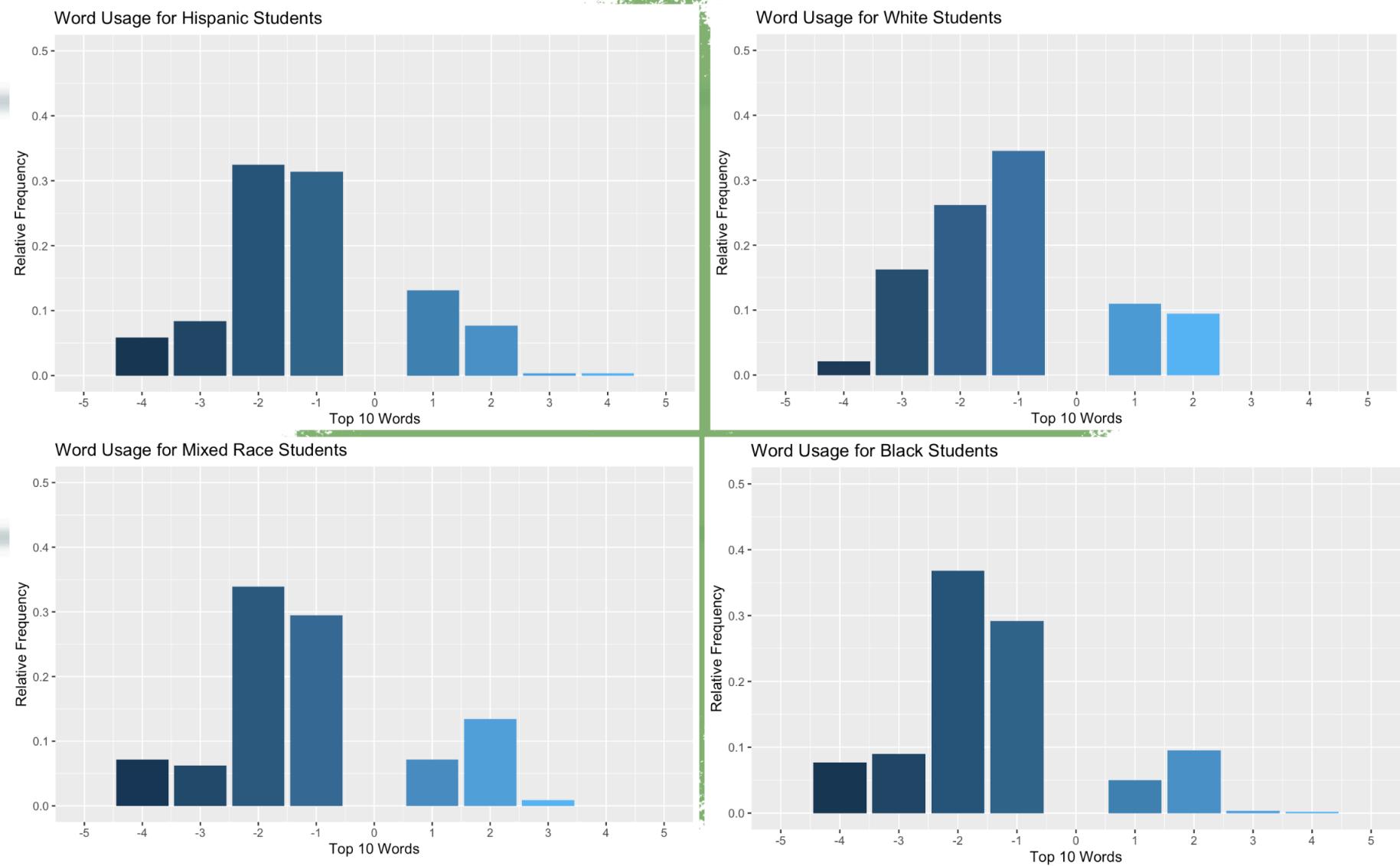


Sentiments for Mixed Race Students

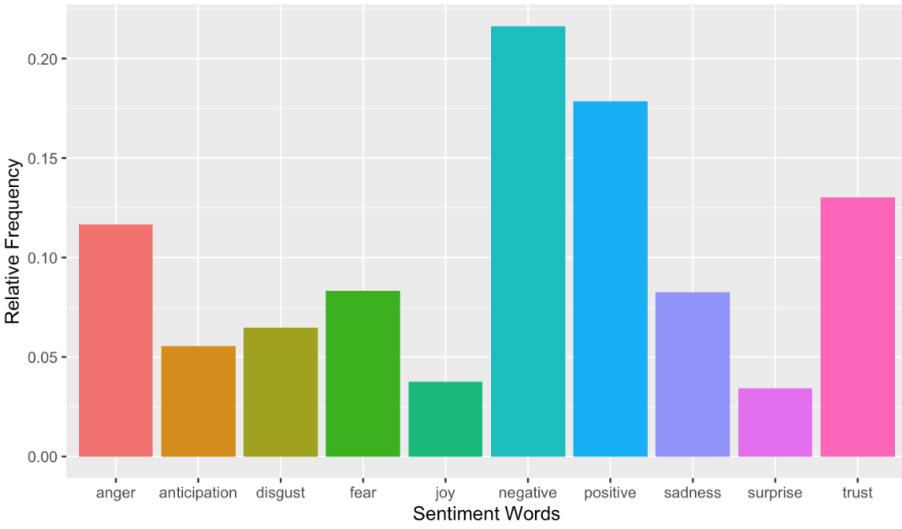


Sentiments for Black Students

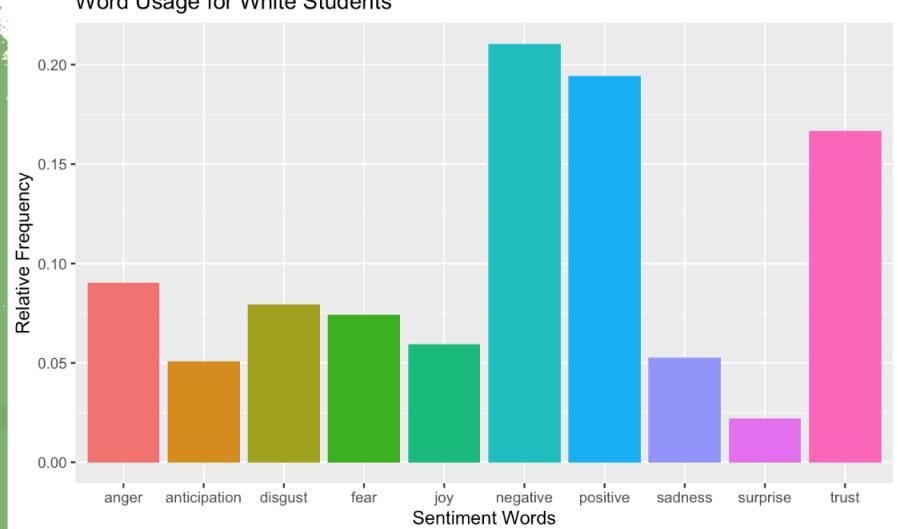




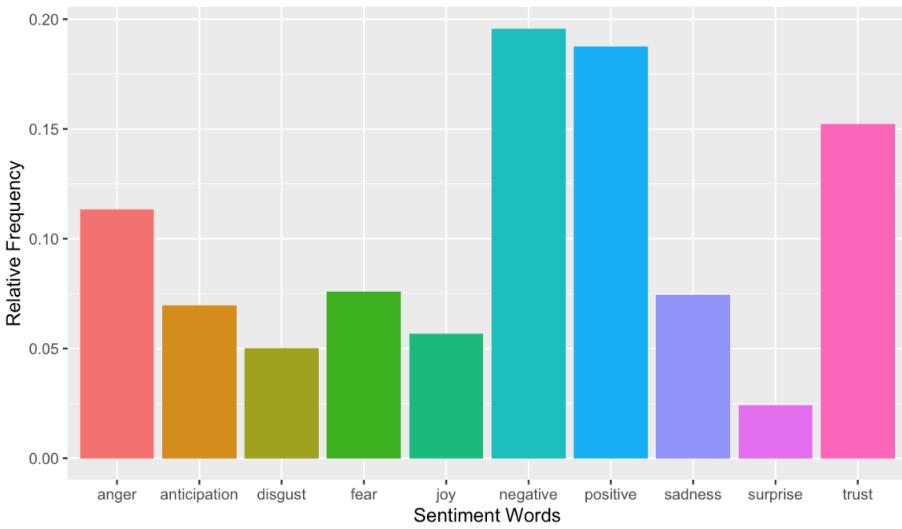
Word Usage for Hispanic Students



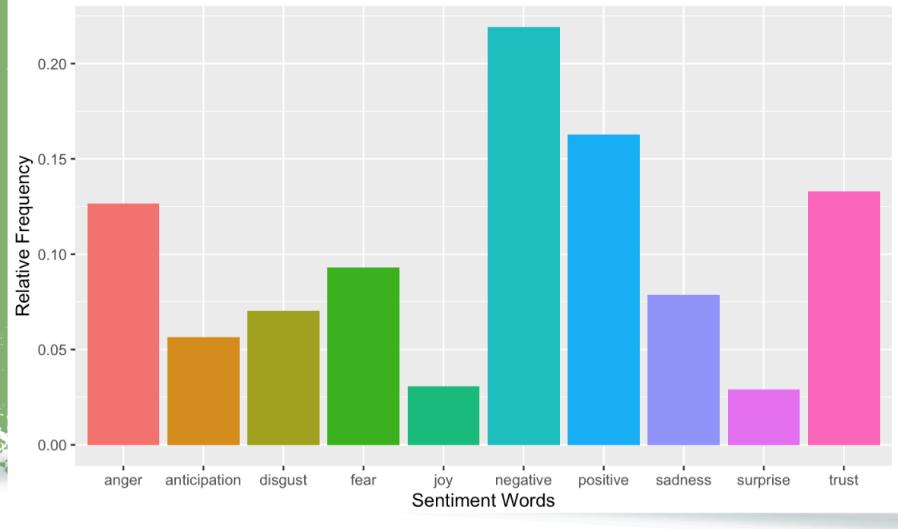
Word Usage for White Students



Word Usage for Mixed Race Students



Word Usage for Black Students



Random Forest Classifier



Classification

*Feature
Importance*

Precision and Recall

Confusion Matrix and Statistics

Reference

Prediction	Green	Orange	Red	Yellow
Green	380	0	0	1
Orange	0	27	3	8
Red	0	1	10	0
Yellow	2	4	0	54

Overall Statistics

Accuracy : 0.9612

95% CI : (0.9401, 0.9765)

No Information Rate : 0.7796

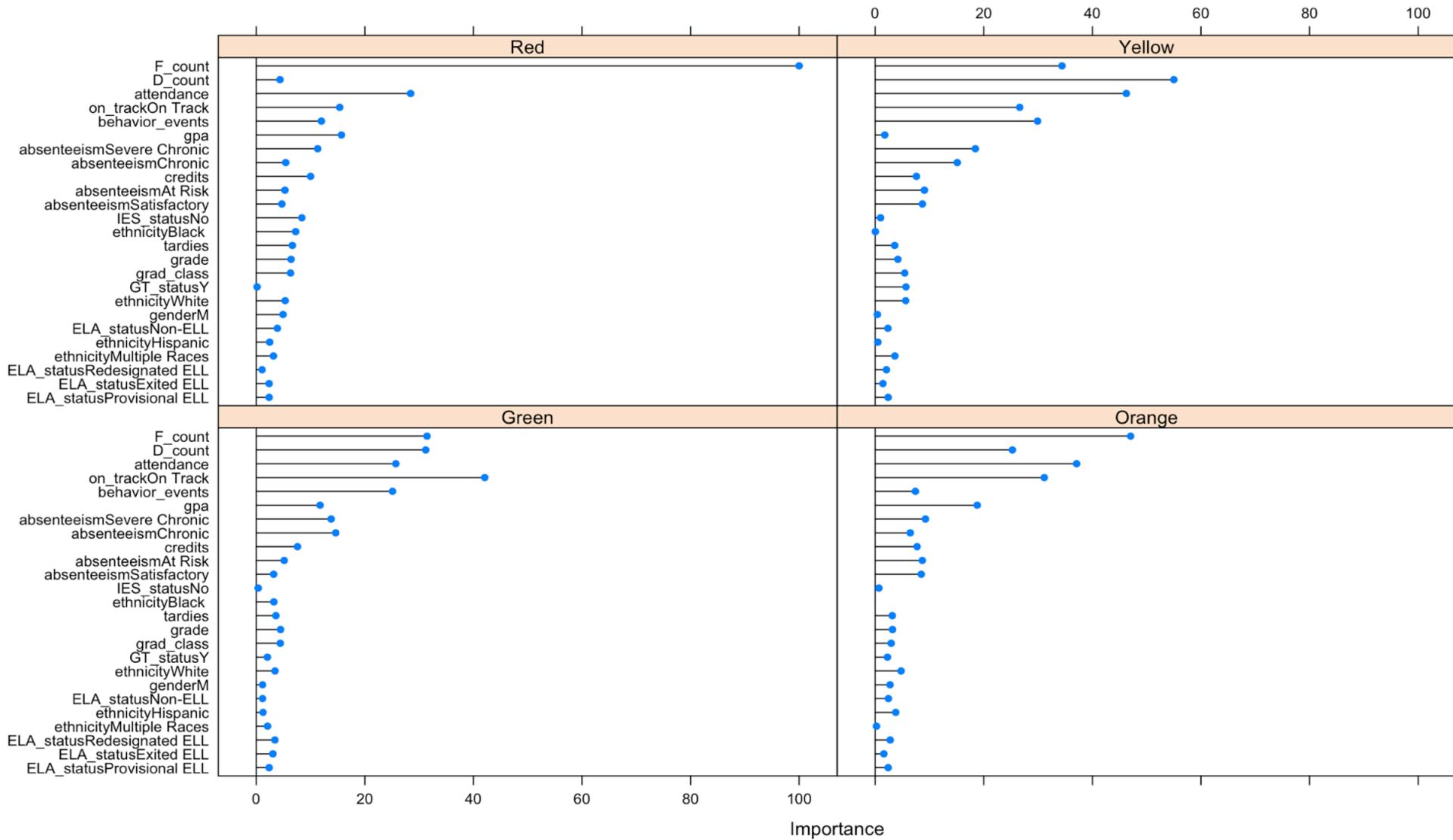
P-Value [Acc > NIR] : < 2.2e-16

Kappa : 0.8959

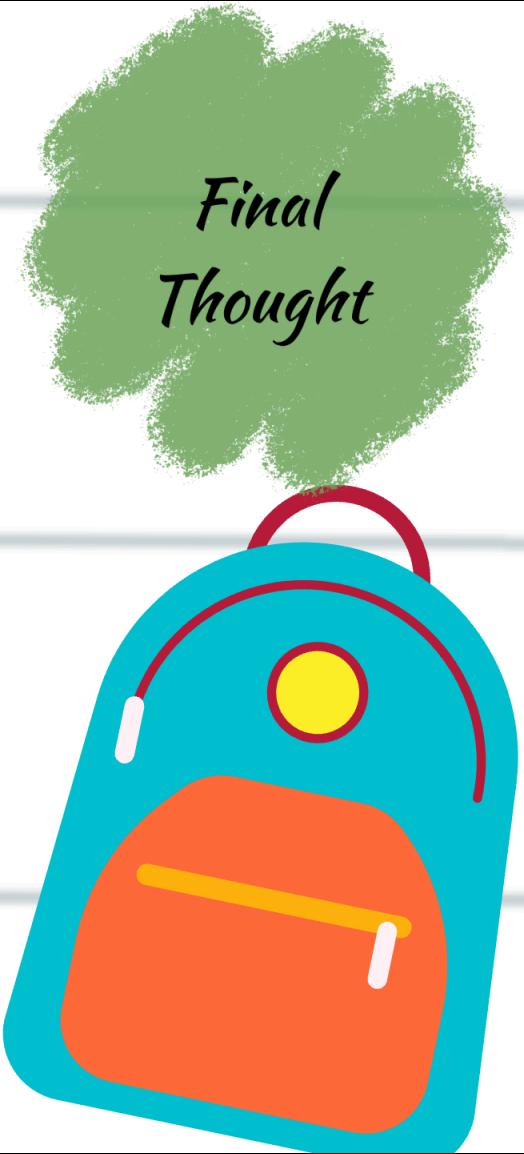
McNemar's Test P-Value : NA

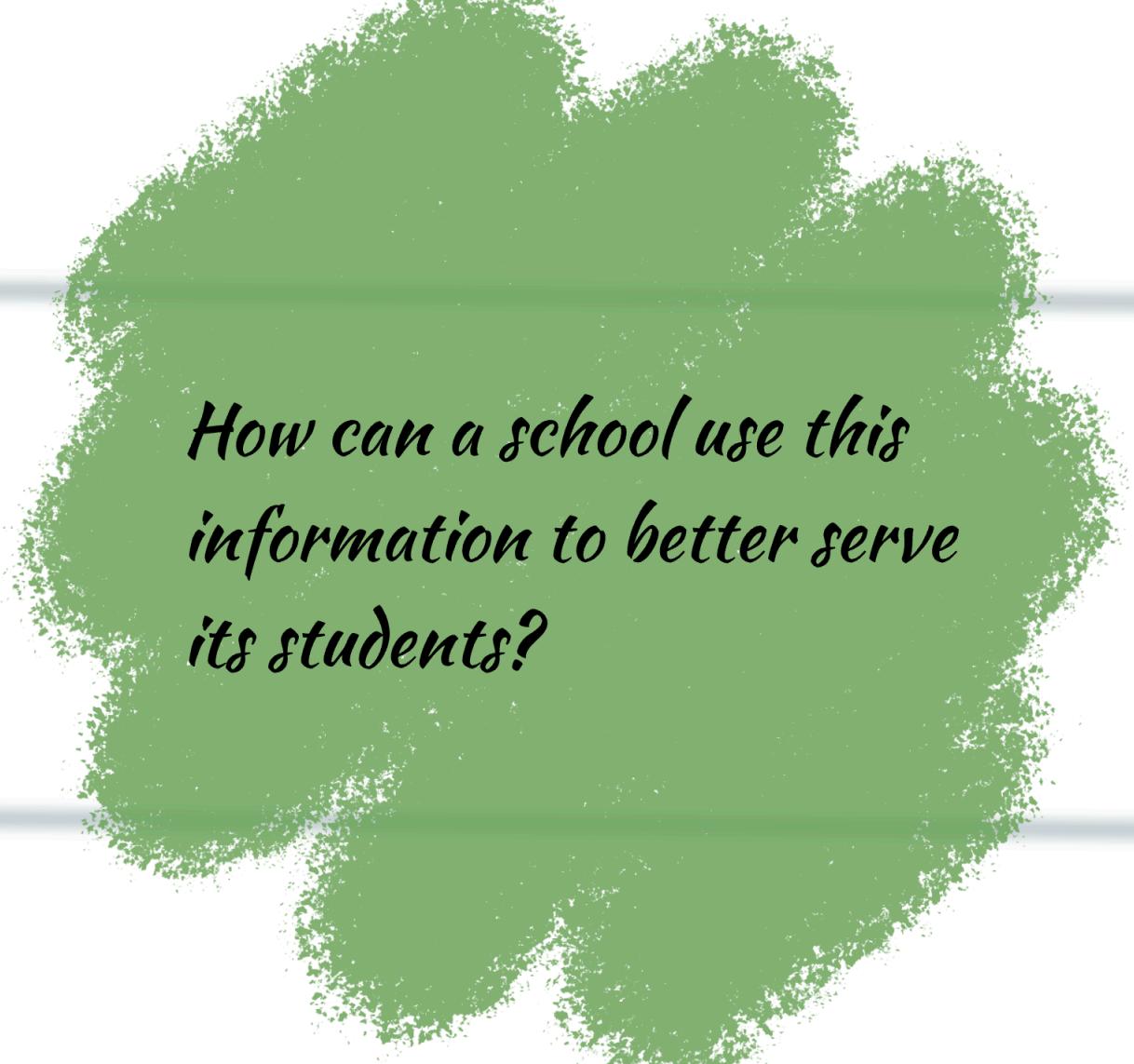
Statistics by Class:

	Class: Green	Class: Orange	Class: Red	Class: Yellow
Precision	0.9974	0.71053	0.90909	0.9000
Recall	0.9948	0.84375	0.76923	0.8571
F1	0.9961	0.77143	0.83333	0.8780
Prevalence	0.7796	0.06531	0.02653	0.1286
Detection Rate	0.7755	0.05510	0.02041	0.1102
Detection Prevalence	0.7776	0.07755	0.02245	0.1224
Balanced Accuracy	0.9928	0.90987	0.88357	0.9215



- Are certain groups of students more likely to be involved in certain behavioral violations? YES
- Are there differences in the ways that events are described based on race or gender? (Length of statement, sentiment, etc.) YES
- What words or phrases are most commonly used in the description of student behavioral incidences? DEPENDS





*How can a school use this
information to better serve
its students?*

Practicum II

High School Behavior

