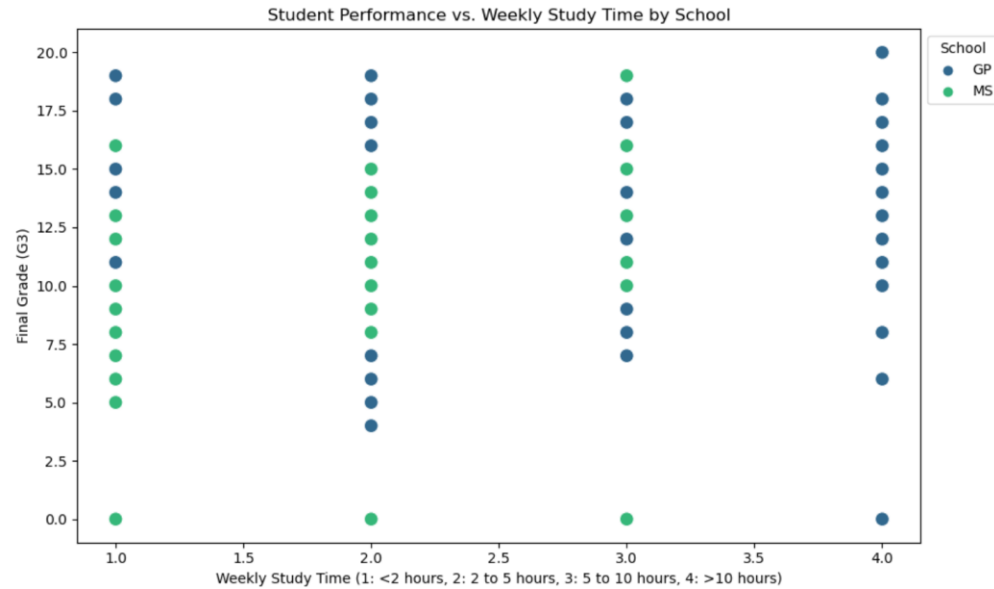


Analysis of Student Performance by Study Time and School



Legend Explanation

figure1

- Blue points:** Students from Gabriel Pereira (GP)
- Green points:** Students from Mousinho da Silveira (MS)

figure2

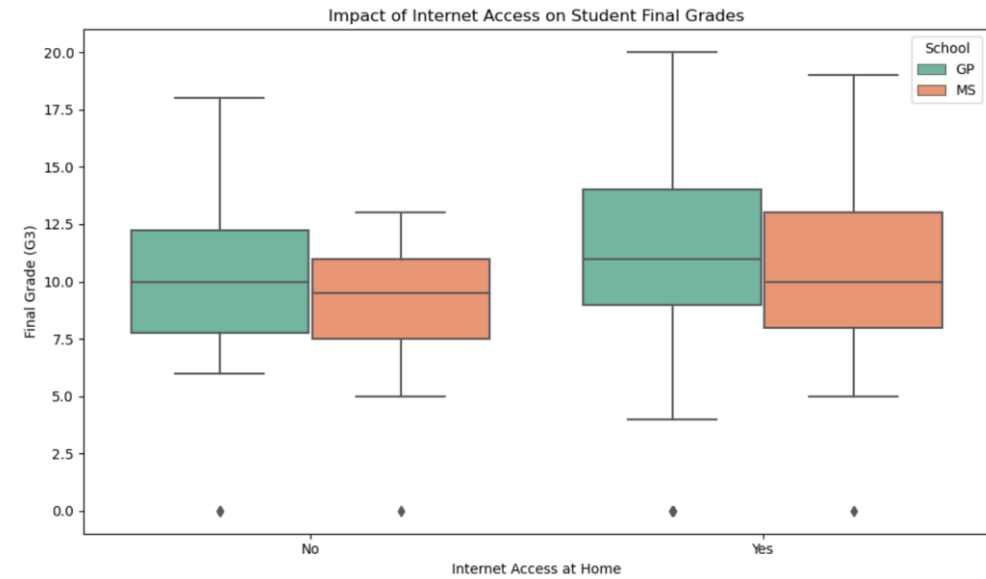
- Green box:** Students from Gabriel Pereira (GP)
- Orange box:** Students from Mousinho da Silveira (MS)

Findings

- Students from both schools show a general trend where more study time correlates with higher grades.
- The variance in grades appears larger for students with higher study times.
- Students from Mousinho da Silveira (MS) generally spend fewer time on study.
- Student who can access internet have higher average score than those who dont.
- GP have better average score than MS

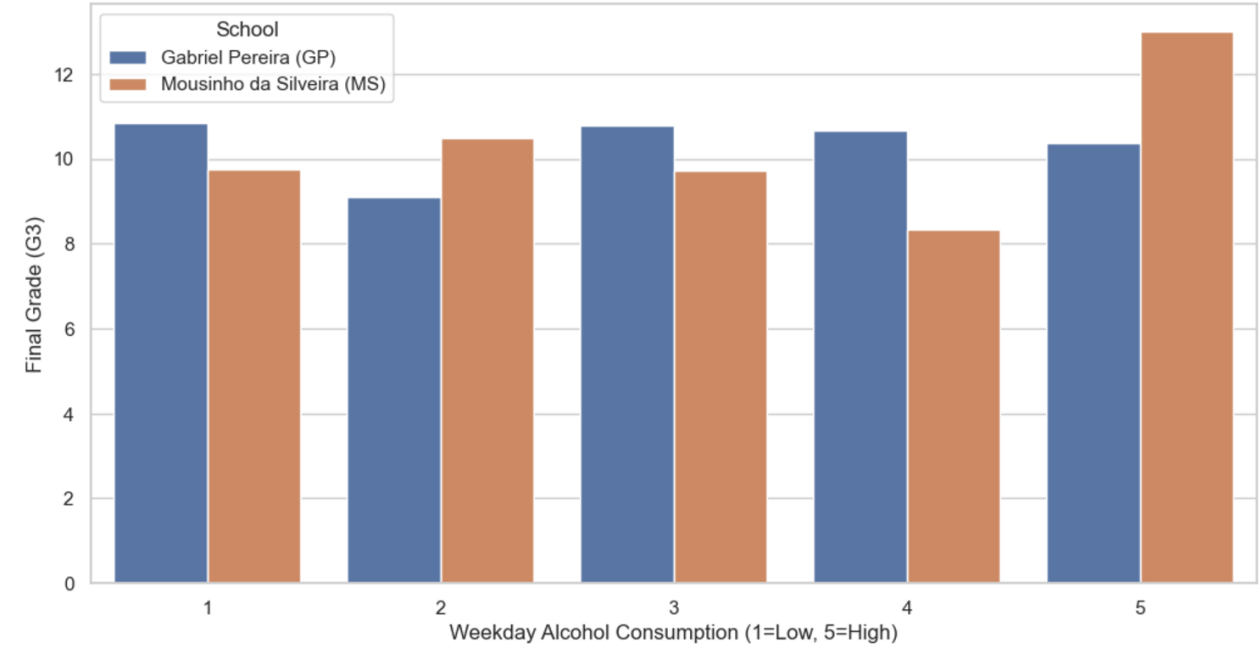
Insights

This visualization helps in understanding how the amount of study time and whether student can access internet impact academic performance.

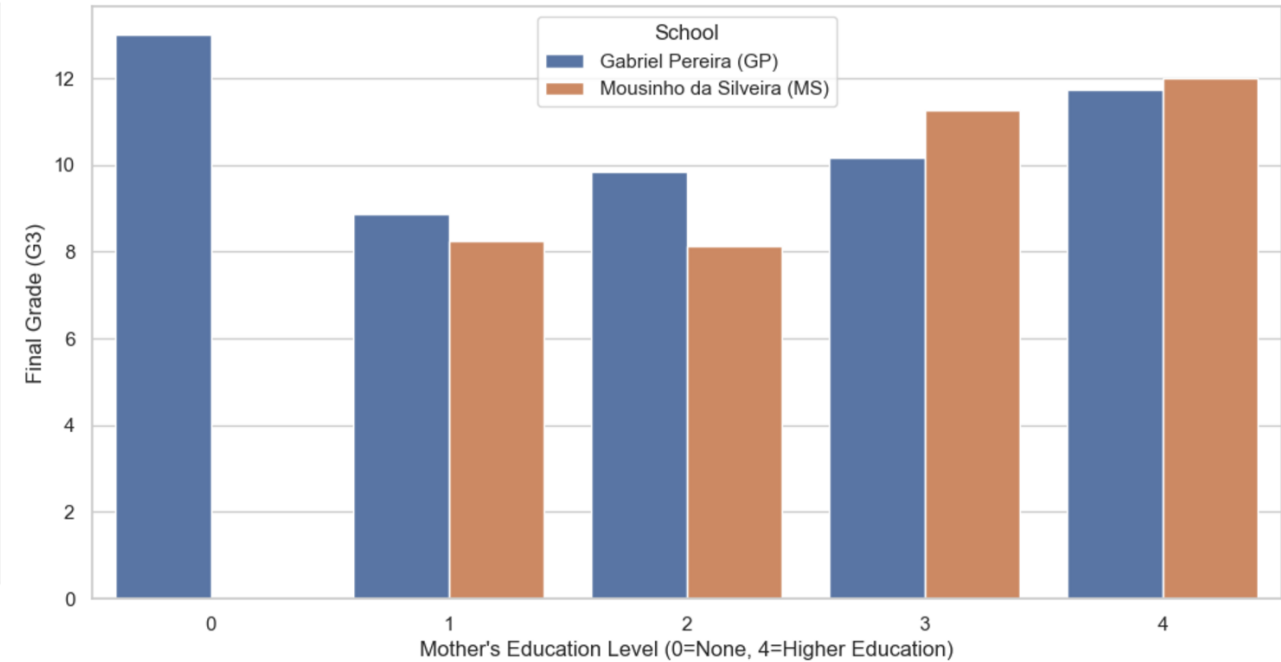


Student Performance by Weekday Alcohol Consumption and Parental Education

Effect of Weekday Alcohol Consumption on Final Grades



Effect of Mother's Education Level on Final Grades



Legend Explanation

Effect of Weekday Alcohol Consumption on Grades:

- Bars: Represent the average final grades (G3) for students with differing levels of weekday alcohol consumption.
- Blue: Students from Gabriel Pereira (GP)
- Orange: Students from Mousinho da Silveira (MS)

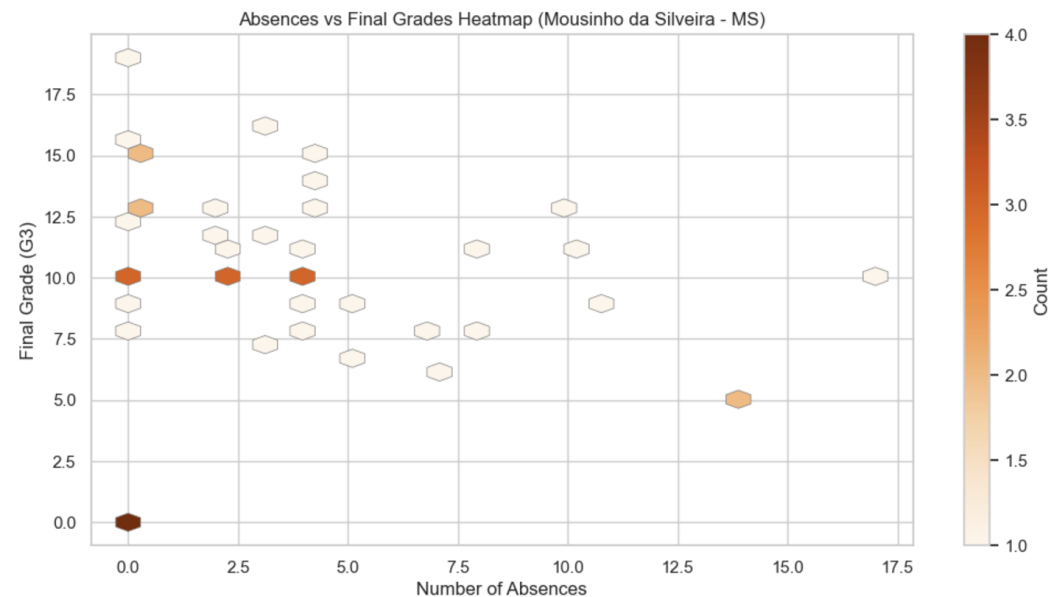
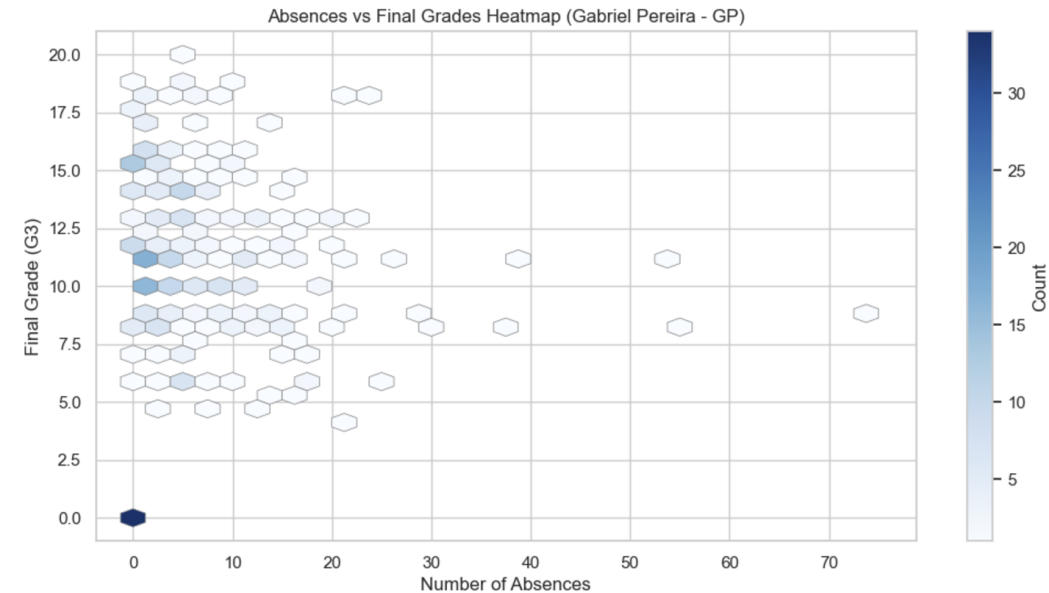
Parental Education and Grades:

- Bars: Represent the average final grades (G3) for students grouped by their mother's education level (Medu).
- Green: Students from Gabriel Pereira (GP)
- Orange: Students from Mousinho da Silveira (MS)

Findings

- It is strange that Alcohol looks not influence the final grades too much.
- Students from GP generally achieve higher grades across all alcohol consumption levels compared to MS.
- Students with mothers who have higher education levels tend to achieve better grades, this trend is more pronounced for GP students compared to MS students.

Analysis of Student Performance by Absences and Academic Performance and Conclusion



Data and Method

Data: The dataset contains information on 33 features related to demographics, parental background, and academic performance of students from two schools: Gabriel Pereira (GP) and Mousinho da Silveira (MS).

Key columns used: school, Dalc, Medu, G3, and absences.

Method:

Data Segmentation: Students were grouped by school to facilitate comparison.

Visualization Techniques:

Bar Plots: Used to illustrate average grades across levels of weekday alcohol consumption and parental education.

Scatter Plot: Used to analyze the correlation between absences and grades.

Analysis: Mean values were computed for group comparisons. Visualizations highlight trends and differences between the two schools.

Significance Statement

This analysis is critical in understanding the factors influencing student academic performance, offering insights into:

1. Policy Recommendations: Educators can target interventions to mitigate the impact of alcohol consumption and promote parental engagement in education.

2. School-Specific Strategies: Differences between the two schools highlight the need for tailored strategies to support student performance.

3. Student Well-Being: The relationship between absences and performance underscores the importance of attendance and identifying barriers to regular school participation.

This work contributes to educational policy and resource allocation, directly supporting efforts to enhance student outcomes.

Legend Explanation

Absences and Academic Performance

• **Points:** Represent individual students, showing their absences on the x-axis and final grades (G3) on the y-axis

Findings

- There is a general negative trend where higher absences correlate with lower final grades.
- Students from GP show slightly better resilience to absences compared to MS.