

# Student Performance Factors

**ANALYSIS**



# Factors :

## CATEGORY I

- Study hours
- Attendence
- Extracurricular activities
- Physical activities
- Sleep hours
- Self study

## CATEGORY III

- Learning disability
- Family income
- Parental education
- Distance b/w school and home

## CATEGORY II

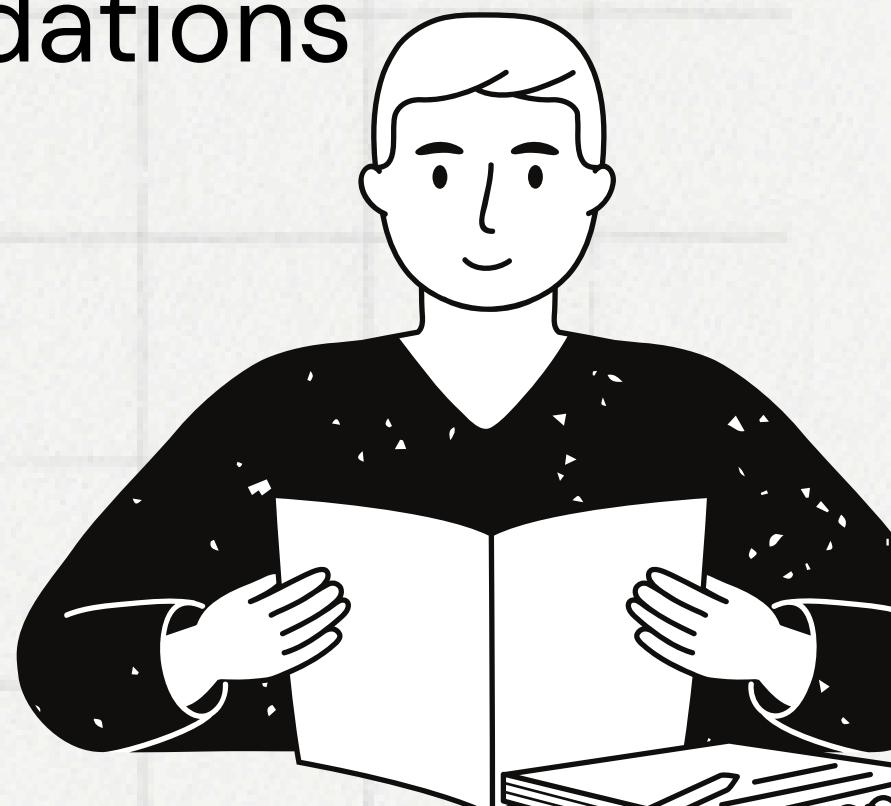
- Parental involvement
- Access to resources
- Motivation level
- Interest
- Teacher quality
- Peer influence
- Internet
- School



# Project vision and mission

To analyze the relationship between various factors affecting student performance and their exam scores, aiming to identify key drivers for improvement.

The objective is to provide actionable recommendations to enhance academic outcomes based on these insights.



# Analysis process



**01**

**Data Acquisition**  
Downloaded the student performance factor dataset from Kaggle.



**02**

**Data Cleaning**  
Filled missing values and cleaned the dataset to ensure data consistency and accuracy.



**03**

**Data Preparation**  
Made necessary changes in Excel, including creating new columns for enhanced analysis.



**04**

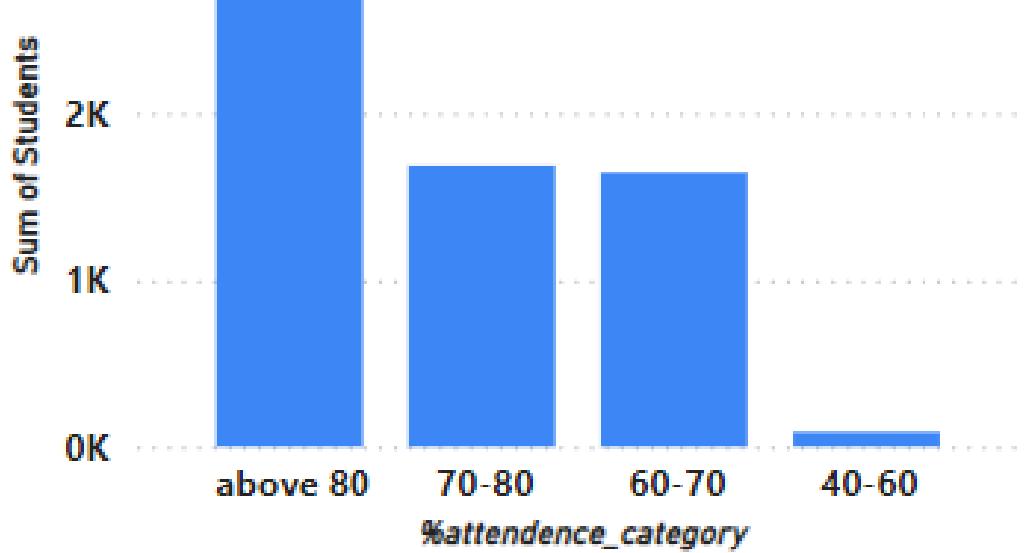
**Data Analysis**  
Analyzed the data to identify key factors influencing student performance.



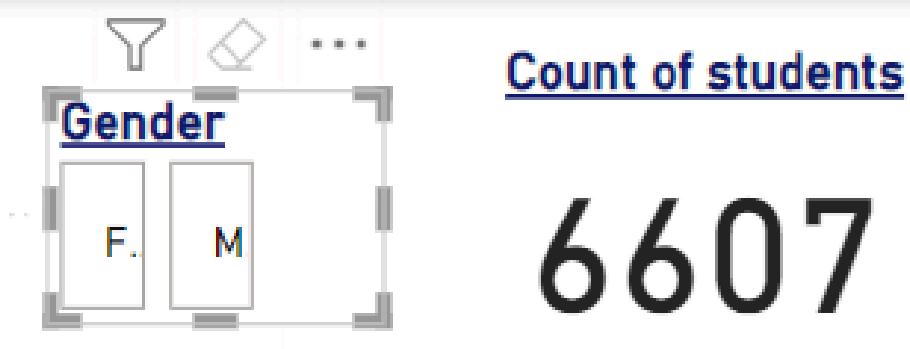
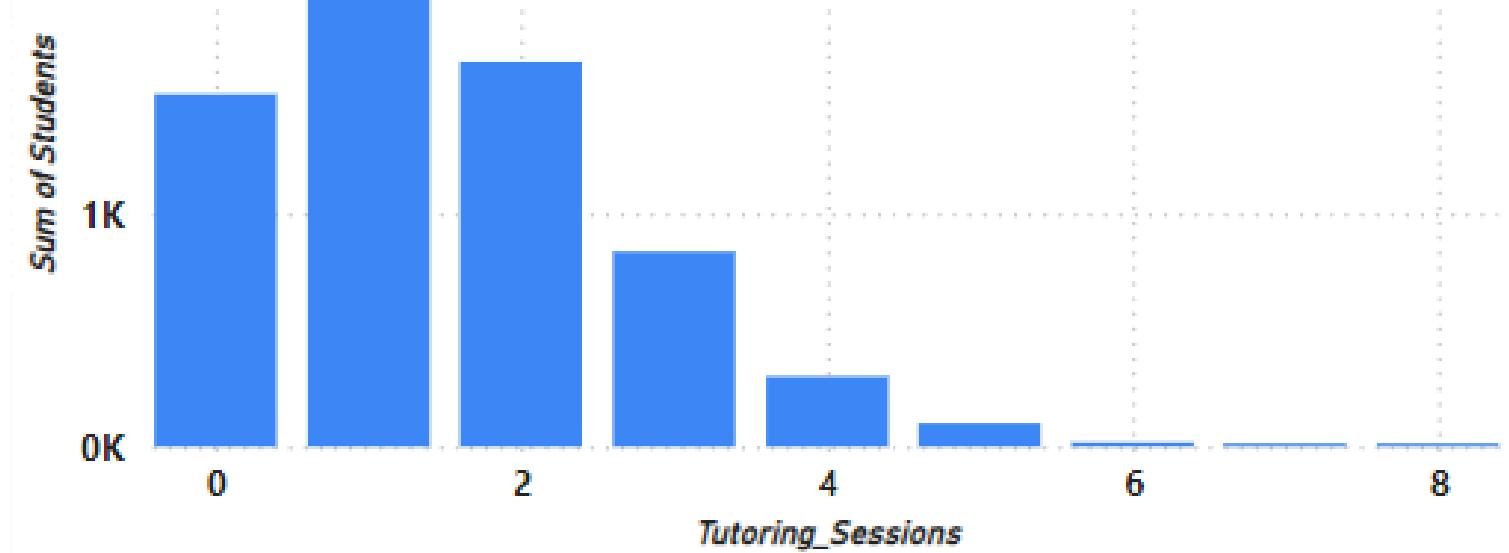
**05**

**Visualization**  
Created a dashboard in Power BI to visually represent findings and insights.

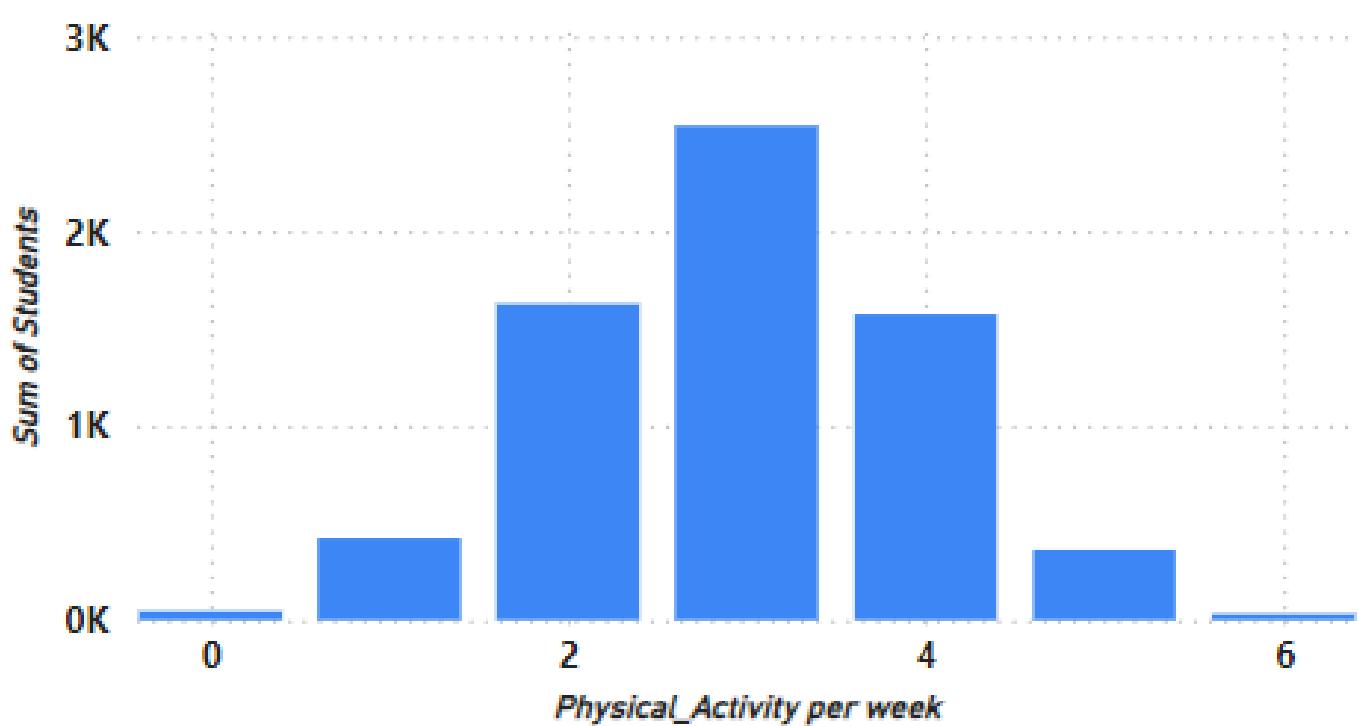
## Sum of Students by %attendance\_category



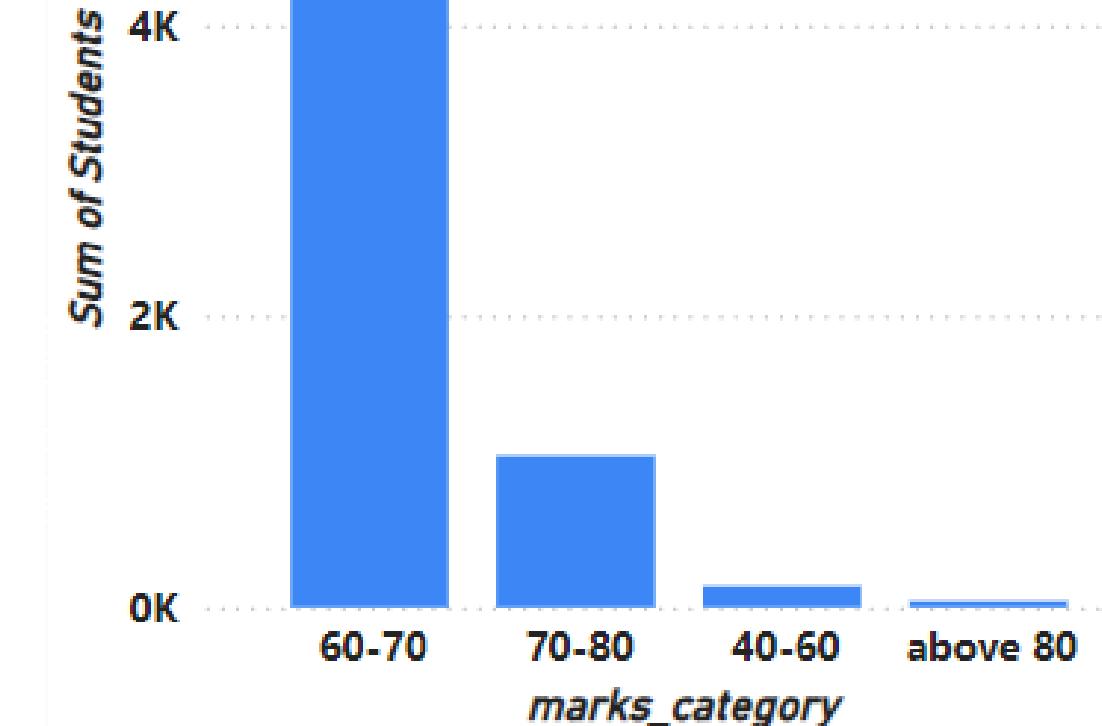
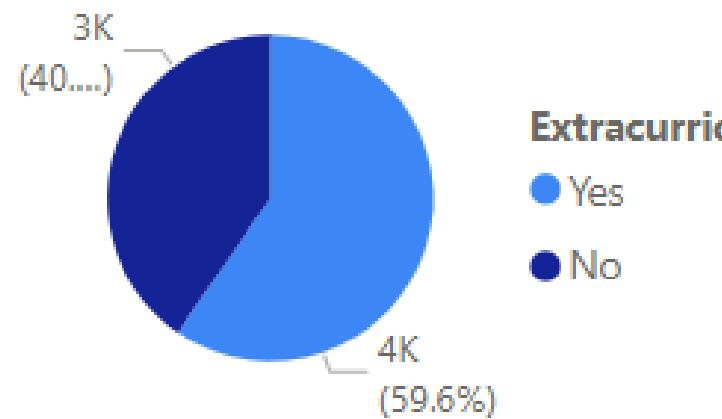
## Sum of Students by Tutoring Sessions



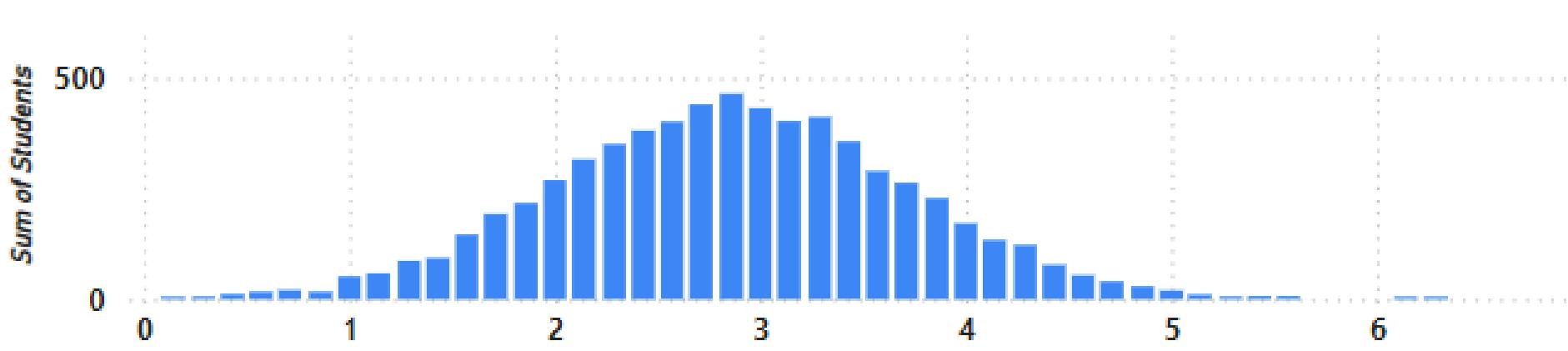
## Sum of Students by Physical Activity per week



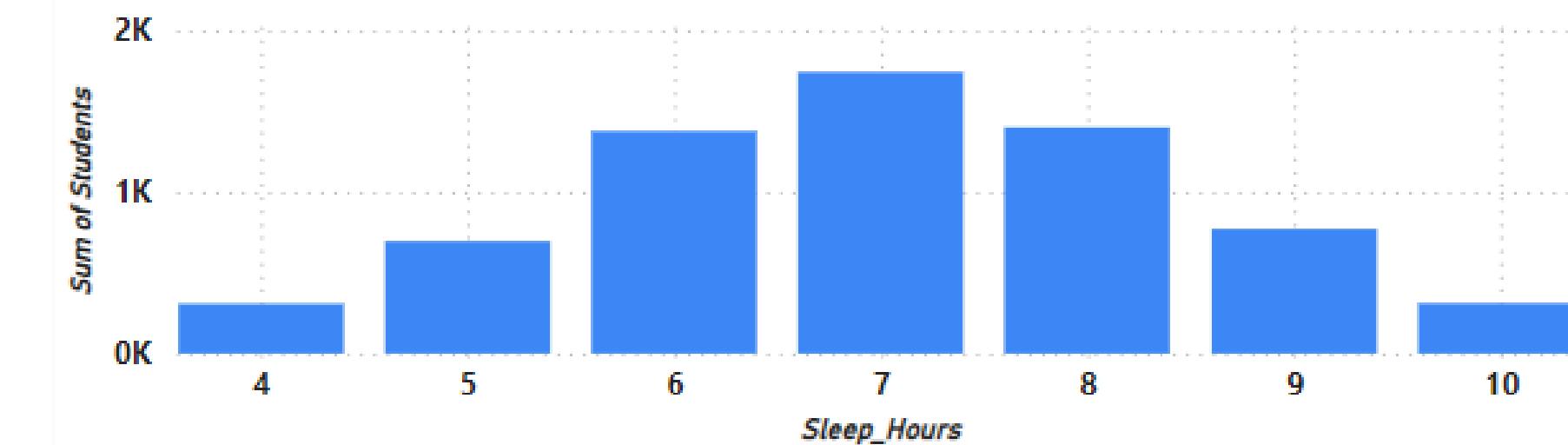
## Sum of Students by Extracurricular Activities



## Sum of Students by self study\_per\_day



## Sum of Students by Sleep Hours



# **STUDENTS ACTIVITIES IN EACH MARKS SECTION**

**(CONSIDERING MAJORITIES UNDER EACH FACTORS)**

## **Above 80**

- **Count-43**
- Attendance - 70-80%
- Tutoring session- 1-2 per week
- Self study- 3+hrs per day
- Physical activities- 3-4 hrs.
- Sleep- 6-7 hrs.

## **70-80**

- **Count-1040**
- Attendance- 8.75% need to increase it
- Tutoring session- 25% taking more than 2 sessions
- Self study- Good (3+ hrs.)
- Physical activities- 32.8% needs to decrease it
- Sleep- 37.6% getting 8+hrs. sleep

## **60-70**

- **Count-5379**
- Attendance- 58.8 % need to increase it
- Tutoring session- 17.8% taking more than 2 sessions
- Self study- 59% less than 3 hrs.
- Physical activities- 5.6% needs to decrease it
- Sleep- 37.6 % getting 8+hrs. sleep

## **40-60**

- **Count-145**
- Attendance- 97.9 % need to increase it
- Tutoring session- 0-2 per week
- Self study- all less than 2.4 hrs.
- Physical activities- 2-4 hrs.
- Sleep- 36.5 % getting 8+hrs. sleep

# Comparison of each factors with respect to current marks category

## Parental Involvement

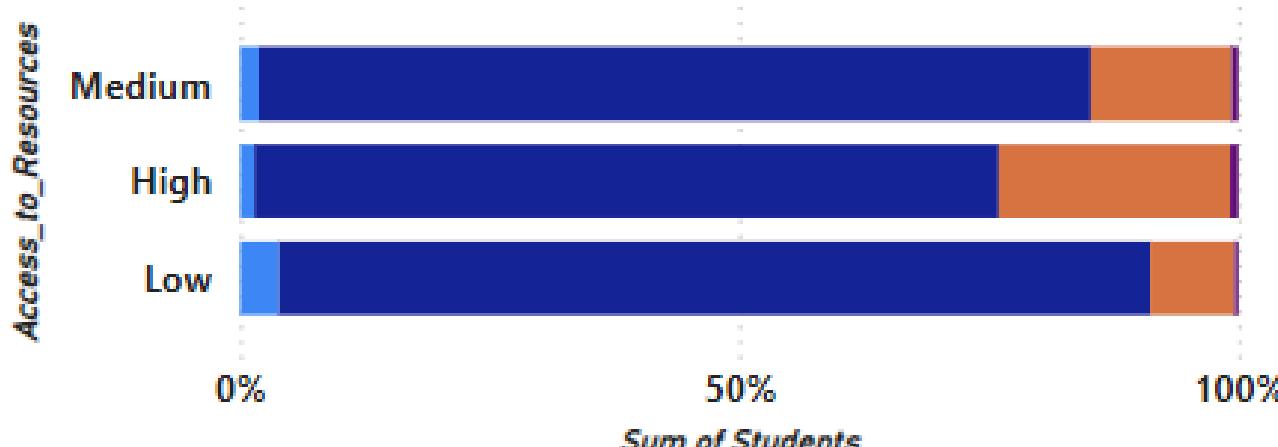
marks_category	High	Low	Medium
40-60	17	55	73
60-70	1455	1142	2782
70-80	421	128	491
above 80	15	12	16
<b>Total</b>	<b>1908</b>	<b>1337</b>	<b>3362</b>

## Peer Influence

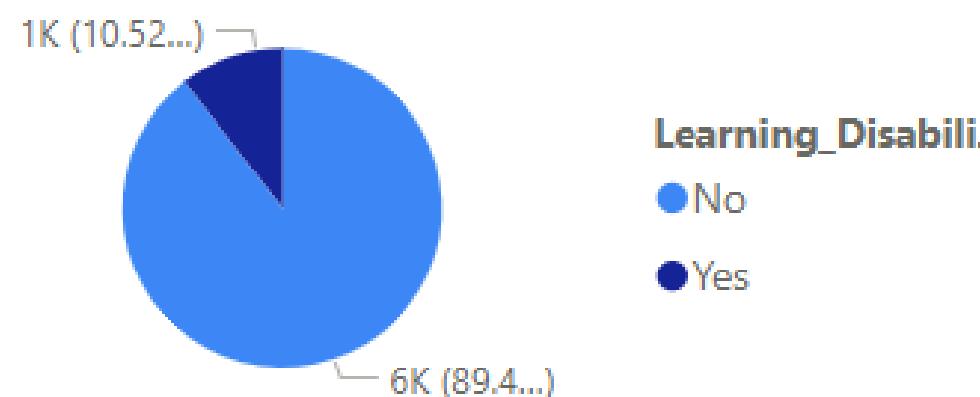
marks_category	Negative	Neutral	Positive
40-60	37	63	45
60-70	1184	2121	2074
70-80	149	391	500
above 80	7	17	19
<b>Total</b>	<b>1377</b>	<b>2592</b>	<b>2638</b>

## Sum of Students by Access to Resources and marks category

marks\_category ● 40-60 ● 60-70 ● 70-80 ● above 80



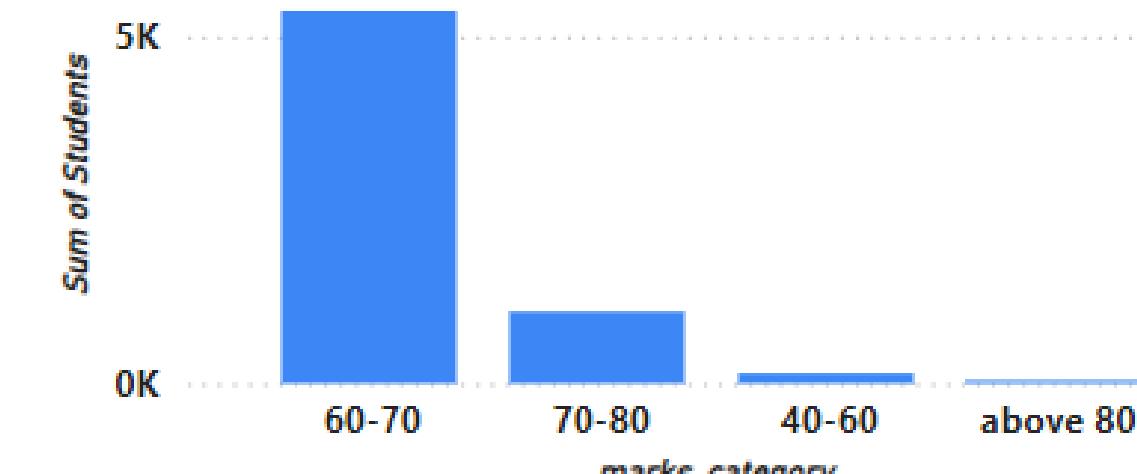
## Sum of Students by Learning Disabilities



## School Type

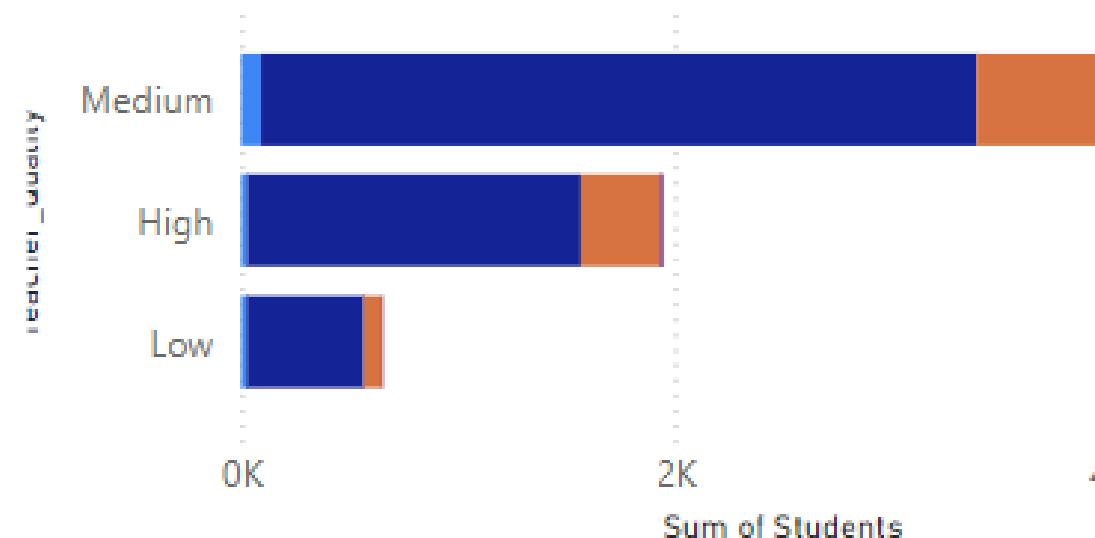


## Sum of Students by marks category



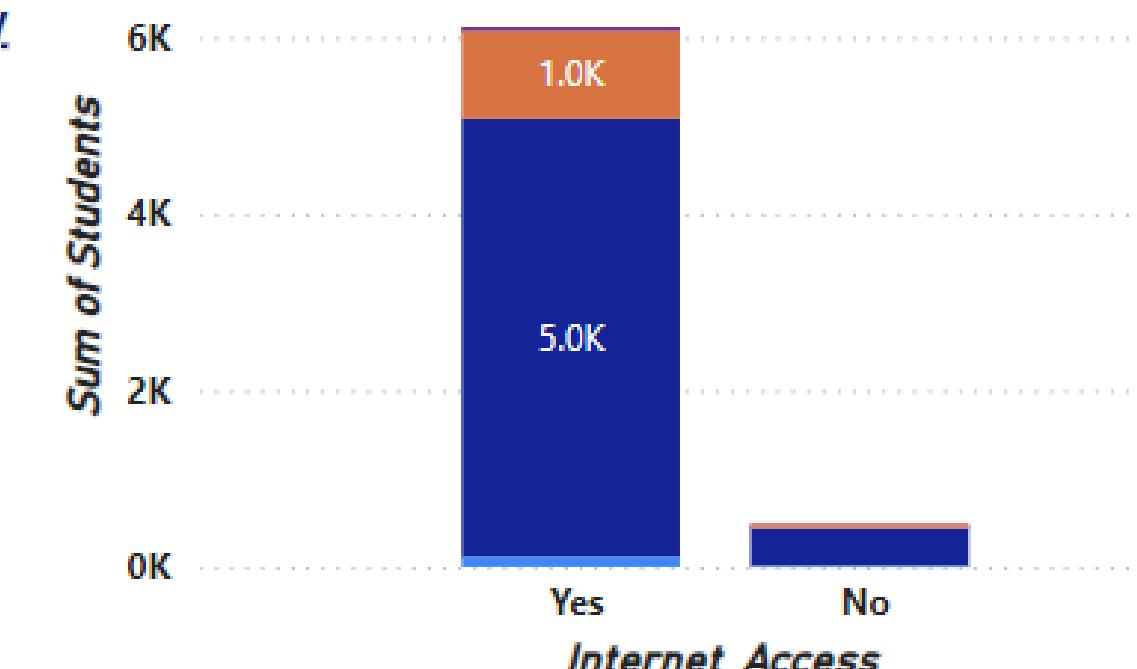
## Sum of Students by Teacher Quality and marks category

marks\_category ● 40-60 ● 60-70 ● 70-80 ● above 80



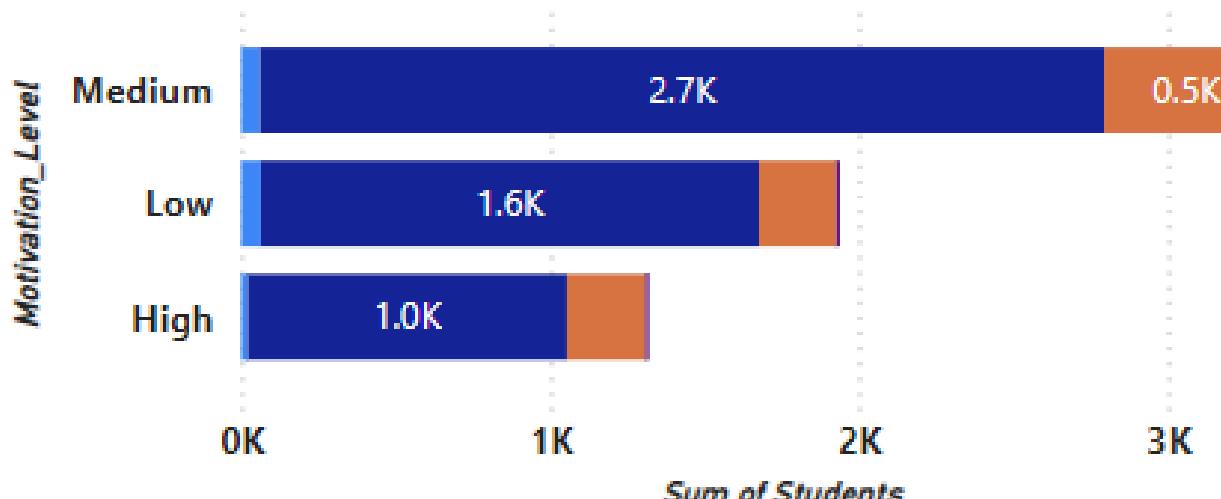
## Sum of Students by Internet Access and marks category

marks\_categ... ● 40-60 ● 60-70 ● 70-80 ● above 80



## Sum of Students by Motivation Level and marks category

marks\_category ● 40-60 ● 60-70 ● 70-80 ● above 80



# Final reflections and future steps

- Above 80 students have good balance in all fields.
- Students within 40-60 are totally dependent on self study and tutoring sessions rather than schools
- Huge number of students lie within 60-70 due to less self study hrs. , more sleep hrs. ,low attendance etc.
- 70-80 ranged students are almost good in everything, needs to be guided.

## Other important factors

- Resources needs to be increased.
- Students need motivation.
- Internet access needs to be decreased.
- Even though the teacher quality is high, students are not scoring above 80.
- Peer influence is high in 60-70 and 70-80 students.

