



Analysis of the effect of students' clothing and gender on student-teacher interaction

Content

- Background
- Data Description
- Analysis Approach
- Results
- Summary of Findings
- Recommendations
- Limitations and Further Improvements

Part 1: Background

2. Data Description

3. Analysis Approach

4. Results

EXPERIMENT



Objective

Examine the effect of a student's gender and clothing type on his/her interaction with the teacher



Data Content

Interactions between 1 teacher and multiple students



Data Collection

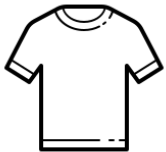
An observer from the education institution

Part 2: Data Description

3. Analysis Approach

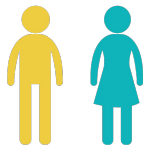
4. Results

5. Summary of
Findings



Clothing Type

- Standard
- Special
- Unisex



Gender

- Male
- Female



Number of Interactions



Type of Interaction

- Positive
- Negative

462 observations



Part 3: Analysis Approach



4. Results

5. Summary of
findings

6. Recommendations

2-Step Analysis Approach

1

Data Exploration

To visualize the data, recognize any underlying patterns, and use this to formulate hypothesis

2

ANOVA

To verify the hypothesis – if it is based on statistical evidence

Part 4: Results



5. Summary of
findings

6. Recommendations

7. Limitations &
Further Improvement

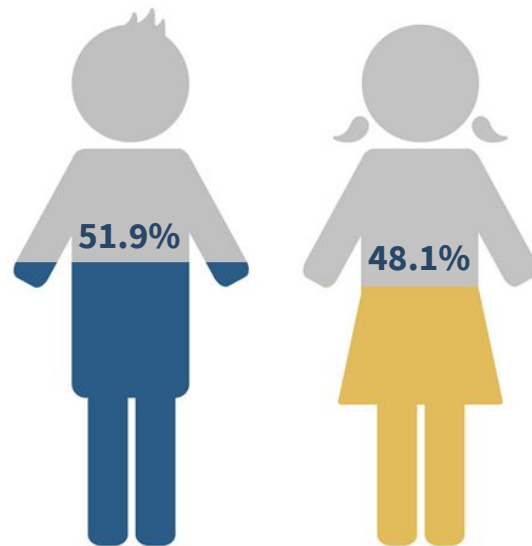
4.1. Effect of the student's gender and clothing type on the Number of Interactions

Gender

Hypothesis:

A male student has more interactions with the teacher than a female student, on average.

*Distribution of the number of interactions
by gender*



Gender

Hypothesis:

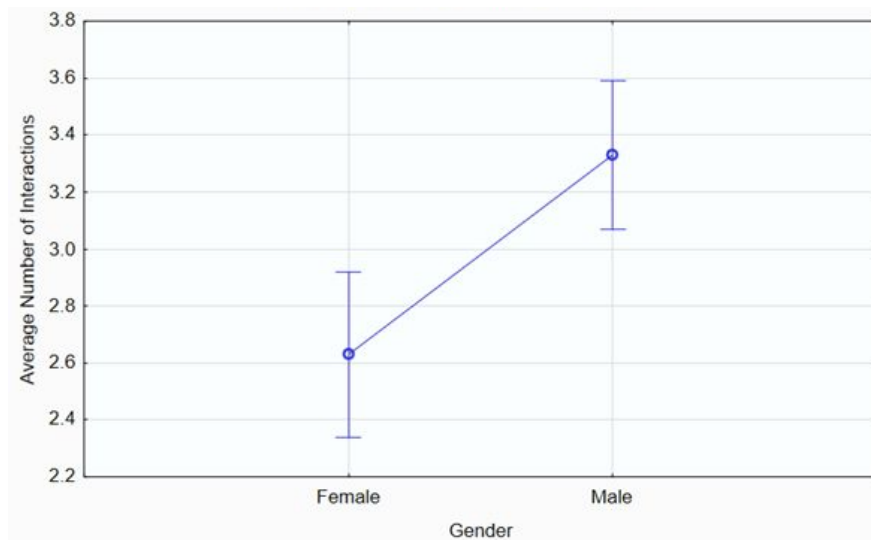
A male student has more interactions with the teacher than a female student, on average.

Result:



**Significant
Difference**

On average, a female student has 2.59 interactions, while a male student has 3.27 interactions

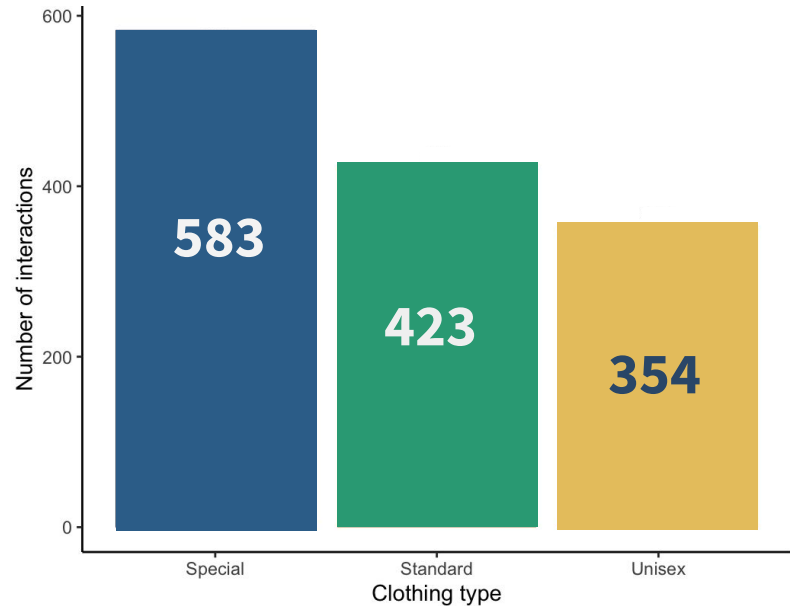


Clothing Type

Hypothesis:

The type of student's clothing has an impact on the number of interactions with the teacher

Number of interactions by Students' Clothing Type



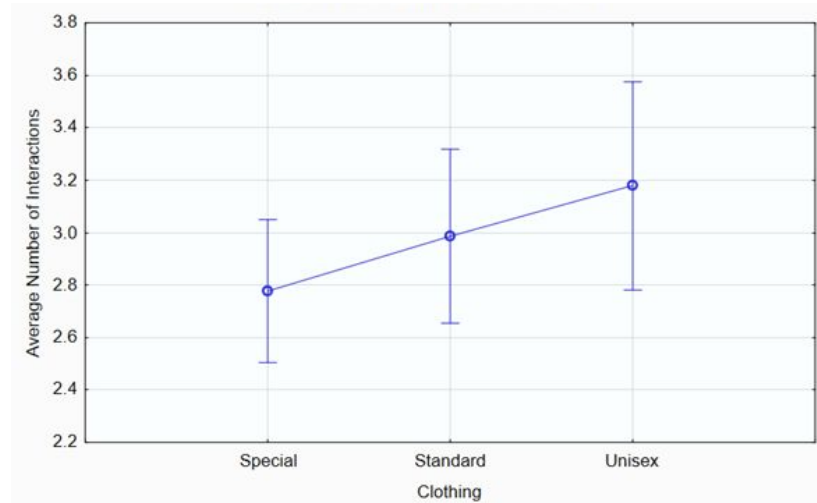
Clothing Type

Hypothesis:

The type of student's clothing has an impact on the number of interactions with the teacher

Result:

X No Significant
Difference



4.2. Effect of the student's gender and clothing type on the Type of Interactions

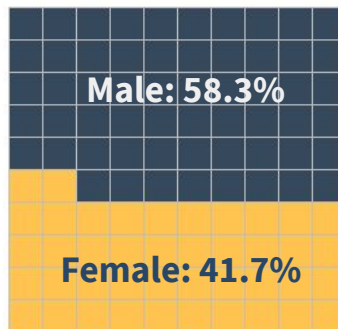
Gender

Hypothesis:

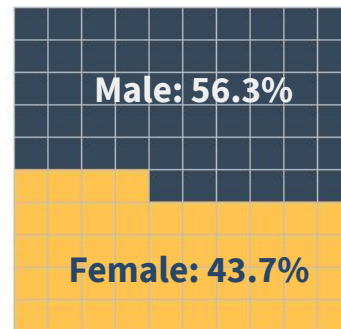
Male students are more likely to have positive interactions with the teacher than the female students, on average.

Distribution of Gender by Type of interaction

Positive Interaction

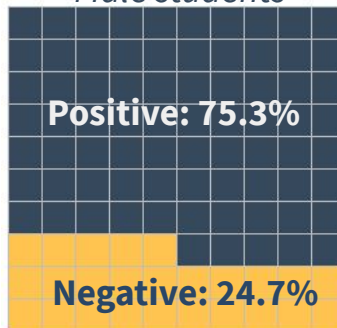


Negative Interaction

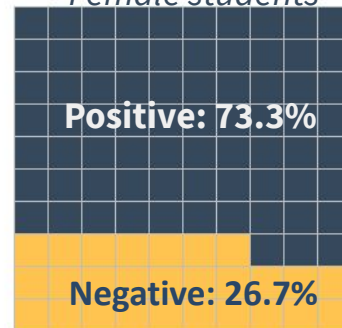


Distribution of Type of interaction by Gender

Male students



Female students



Gender

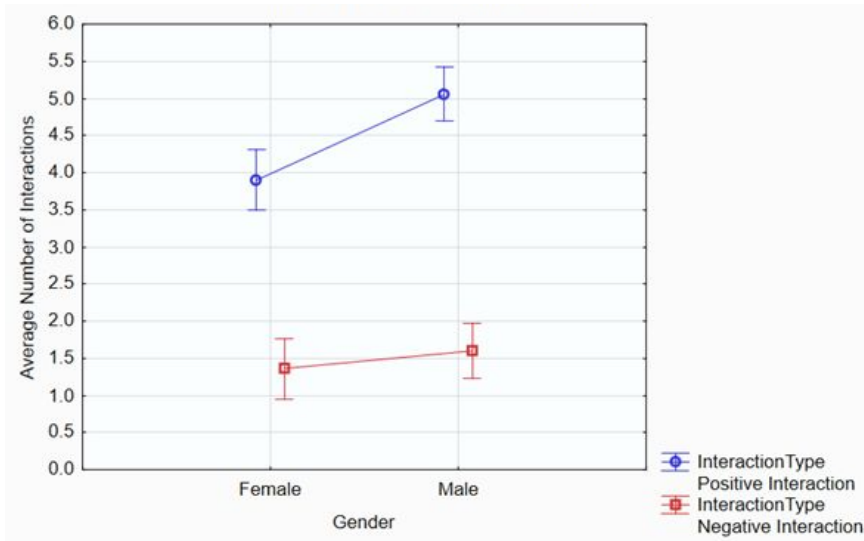
Hypothesis:

Male students are more likely to have positive interactions with the teacher than the female students, on average.

Result:



Significant Difference

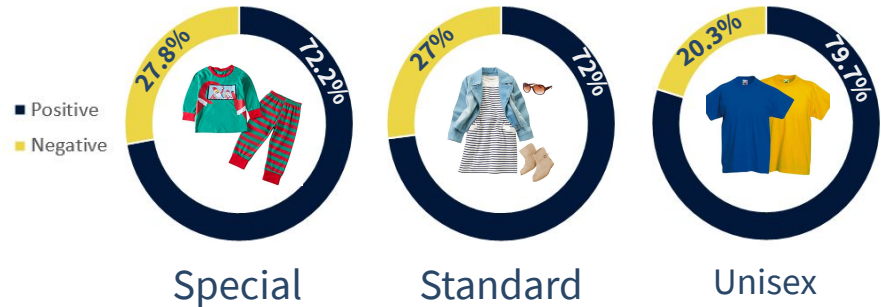


Clothing Type

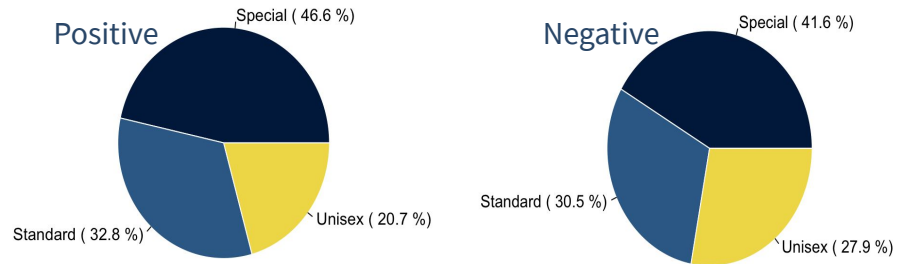
Hypothesis:

Students with unisex clothing have more chances of having a positive interaction with the teacher, than those with standard clothing

Distribution of Type of interaction by Clothing type



Distribution of Clothing type by Type of interaction



Clothing Type

Hypothesis:

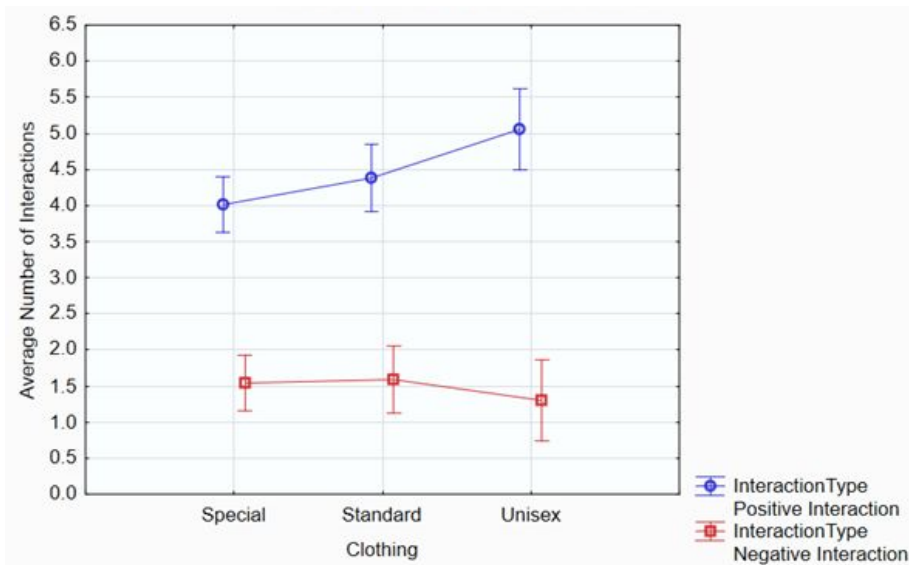
Students with unisex clothing have more chances of having a positive interaction with the teacher, than the other students.

Result:



Significant Difference

**Note: Effect of clothing type on students with clothing type other than unisex clothing is statistically insignificant*

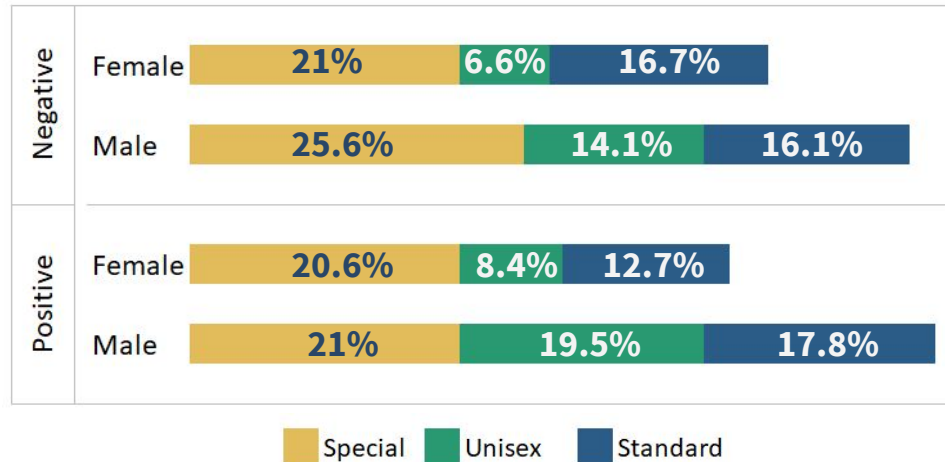


4.3. Combined effect of the student's gender and clothing type on the Type of Interactions

Hypothesis:

Male students with unisex and standard clothing are likely to have more positive interactions than their counter-parts. Both male and female students wearing special clothing are likely to have more negative interactions than the others.

Distribution of type of interaction by gender and clothing type



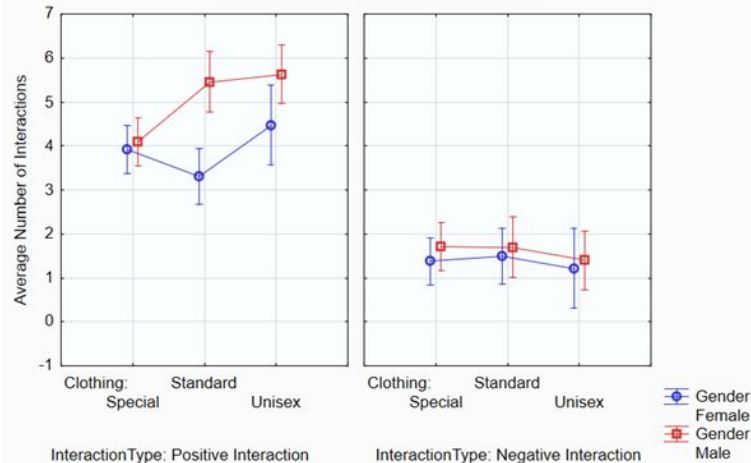
Hypothesis:

Male students with unisex and standard clothing are likely to have more positive interactions than their counter-parts. Both male and female students wearing special clothing are likely to have more negative interactions than the others.



Result:

No Significant Difference

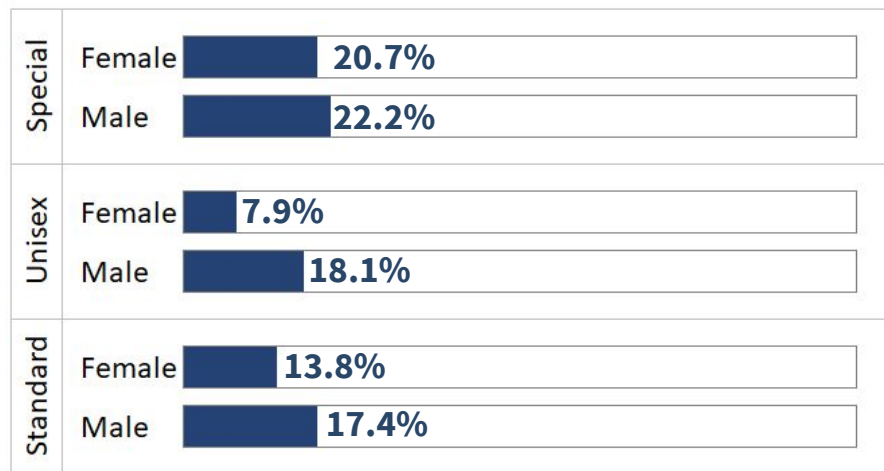


4.4. Combined effect of the student's gender and clothing type on the Number of Interactions

Hypothesis:

Male students wearing unisex or standard clothing are likely to have more interactions than female students wearing the same type.

Distribution of the number of interactions by clothing type and gender



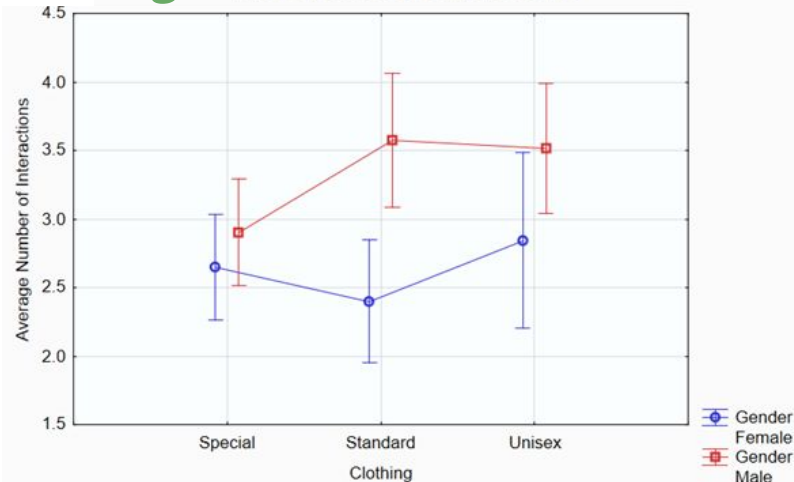
Hypothesis:

Male students wearing unisex or standard clothing are likely to have more interactions than female students wearing the same type.



Result:

Significant Difference

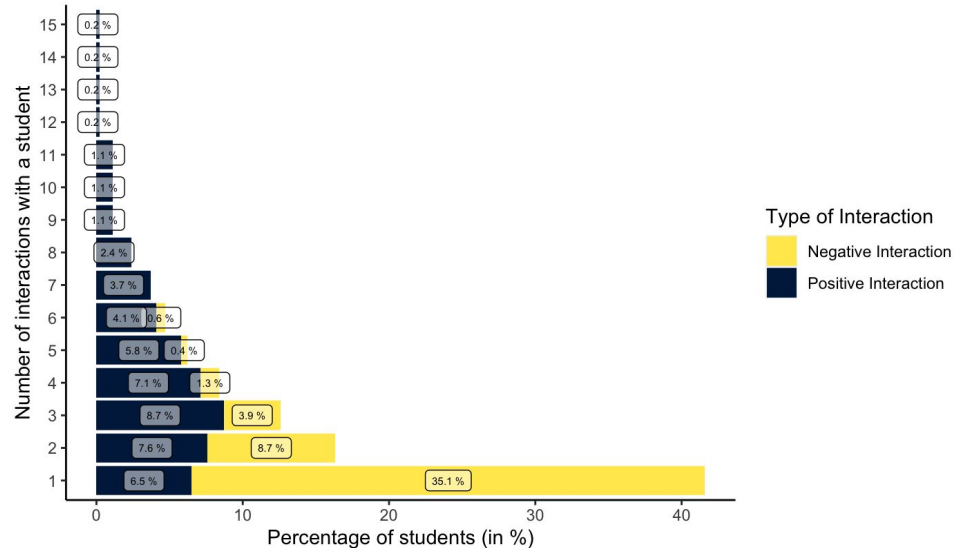


4.5. Relationship between the number of interactions and the type of interaction

Hypothesis:

As the number of interactions with the teacher increases the proportion of positive interactions increases as well

Relationship between the type and number of interactions



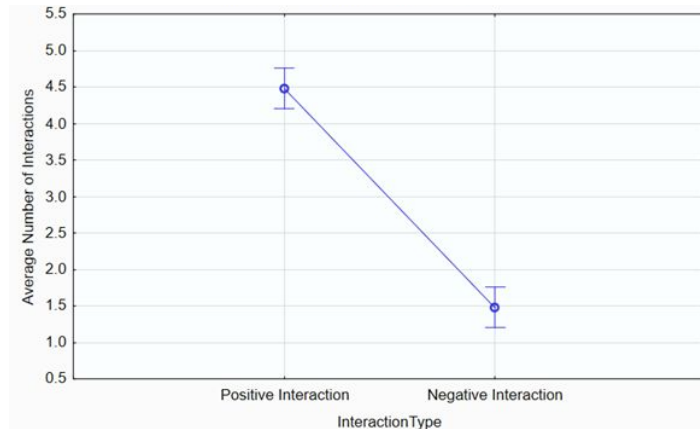
Hypothesis:

As the number of interactions with the teacher increases the proportion of positive interactions increases as well



Result:

Significant Difference



Part 5: Summary of findings



6. Recommendations

7. Limitations &
Further Improvement

** Note: Negative interactions are not related to clothing type or gender*



GENDER

- **Male students** are likely to have more interactions as well as more proportion of positive interactions with the teacher



CLOTHING TYPE

- Students wearing **special clothing** are likely to have more interactions with the teacher
- Students wearing **unisex clothing** are likely to have more positive interactions with the teacher



GENDER & CLOTHING TYPE

- **Male students** wearing **standard** or **unisex clothing** are likely to have more interactions, as well as more positive interactions



NUMBER OF INTERACTIONS

- The more a student interacts with the teacher, the more likely he/she is of having a positive interaction with the teacher

Part 6: Recommendations

7. Limitations & Further improvement



Investigate the **reason** for the teacher's **gender bias** (favouring the **male** students) and take steps to ensure more equality in the teacher's interaction with the students



Analyze the **performance of the students** in their course, to see if the less number of positive interactions with the teachers affects their learning

Part 7: Limitations and Further Improvement

LIMITATION

```
graph LR; A[LIMITATION] --- B[Observer Information]; A --- C[Date/Time of interaction]; A --- D[Student Identification]; B --- E[• Perform the data collection again with multiple observers of diverse backgrounds]; C --- F[• Perform the data collection on different days and include that information in the dataset]; D --- G[• Include a unique identifier for each student in the dataset.]
```

Observer Information

- Perform the data collection again with **multiple observers of diverse backgrounds**

Date/Time of interaction

- Perform the data collection on **different days** and **include that information in the dataset**

Student Identification

- Include a **unique identifier for each student in the dataset.**

Additional Remark

If the institution wants to make **institute-wide policies** based on this experiment, it is strongly advised that **more teachers (of diverse backgrounds)** are included in the data-collection, to **avoid individual bias**.

All the results and conclusions of **this analysis** is based, and **restricted**, on the data collected using a **single teacher**, by the institute.

Thank you for your time.

Please let us know if you have any questions.



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