# Memo

**Purpose**

This memo documents the current situation and recommendation for William County School District. I have provided one redistricting solution to effectively allocate education materials to students in the surrounding neighborhoods. The addition of Elm Elementary will allow overall increase average standardized testing scores while decreasing student to teacher ratio and average distance from school. In this memo, I would like to inform you that I am holding all values equal. I am pitching to take on Option C as the solution for redistricting.

# Recommendations

Student to Teacher Ratio:

* Multiple studies have shown that there is positive impact on students’ learning progress as well as positive impact on socioeconomic factors in the long run with lower student to teacher ratio:
  + Increased probability for attending college increases by 2.7% for all students, with probability being greater for minorities (5.4%) and underprivileged students (7.3%)[[1]](#footnote-1)
* Option C brings down student to teacher ratio to average of 78.8% from current 101%. Nevertheless, it is true that the addition of Elm Elementary will only bring down student to teacher ratio. However, my reasonings are as follows:
  + Option C has one of the lowest average student to ratio across the four options given, with more students allocated to Brook Elementary and Cherry Elementary.
    - There were more counts of decreasing growth rate neighborhoods assigned to Brook Elementary and Cherry Elementary.
    - There are more counts of increasing growth rate neighborhoods assigned to Dogwood and Apple Elementary (have lower student to teacher ratio).

Standardized Testing:

Although standardized testing scores shouldn’t be the only factor that we should take into an account when indicating students’ academic abilities, it still is an important indicator that can give us an insight.

* Option C gives us one of the highest average standardized testing scores across all options of redistricting at 79%
  + The lowest average standardized testing score was reflected by Cherry Elementary school, but it is important to note here that with Option C, more neighborhoods with falling growth rate will be allocated, which means the student to teacher ratio, again will fall leading to higher average standardized testing scores.

Need for Additional Data:

* Additional information of each school’s financial budget would be a great way to improve the data set.
* Teacher performance data would be helpful since lower student to teacher ratio would not necessarily translate to better performance of students if only subpar teachers were to be at school.
* Student Awards information could be also nice since not all students will accelerate in academics.

# Conclusion

Implementation of Option C will optimize the student to teach ratio within all elementary schools, while taking the growth factors of neighborhood assigned to each school into an account. Also, the percentage for minority students is well balanced for Option C as well, allowing even distribution of education across all schools.

Sincerely, Jeong Mo Yang

**What Have I learned Through This Assignment.**

Data ethics is always a tricky ground, since there are no perfect data and it is the user’s call to use, train, predict and analyze which aspect of data they want to emphasize. It is nearly impossible to take every single data point into an account when developing a model. It is a judgement call of whoever is using the data.

It is true that I have only taken hard facts and numbers into an account when I was developing my recommendation for the redistricting. However, I believe that these numbers are important for the welfare of the students in the long run. With this choice, I am neglecting the minority distribution of schools and the average distance that students need to travel each day to reach their schools. Nevertheless, these two factors were rather normalized across all options that were given.

Therefore, I learned that sometimes you need to outweigh certain factors of the dataset to bring maximum utility for all students. Nevertheless, I do not know if the socioeconomic impacts of student to teacher ratio will necessarily impact the students in a positive way. Therefore, I had to make a judgment call that would bring the best educational outcome and benefits to the students.

My plan as a future consultant who will specialize in compliance is to think about what will impact the people first. It is indeed true that my job is to maximize the profits of the clients. However, that profits will not be created without the consumers. Sometimes, you think about the people who generate the data rather than just numbers itself. Therefore, to maximize the retention of customers, it is my job to think about what positive impacts my analysis could bring to the people first and my clients second. In conclusion, it is important for me to think about the ethics behind how the analysis could impact the consumers of the market.

1. https://ncte.org/statement/why-class-size-matters/ [↑](#footnote-ref-1)