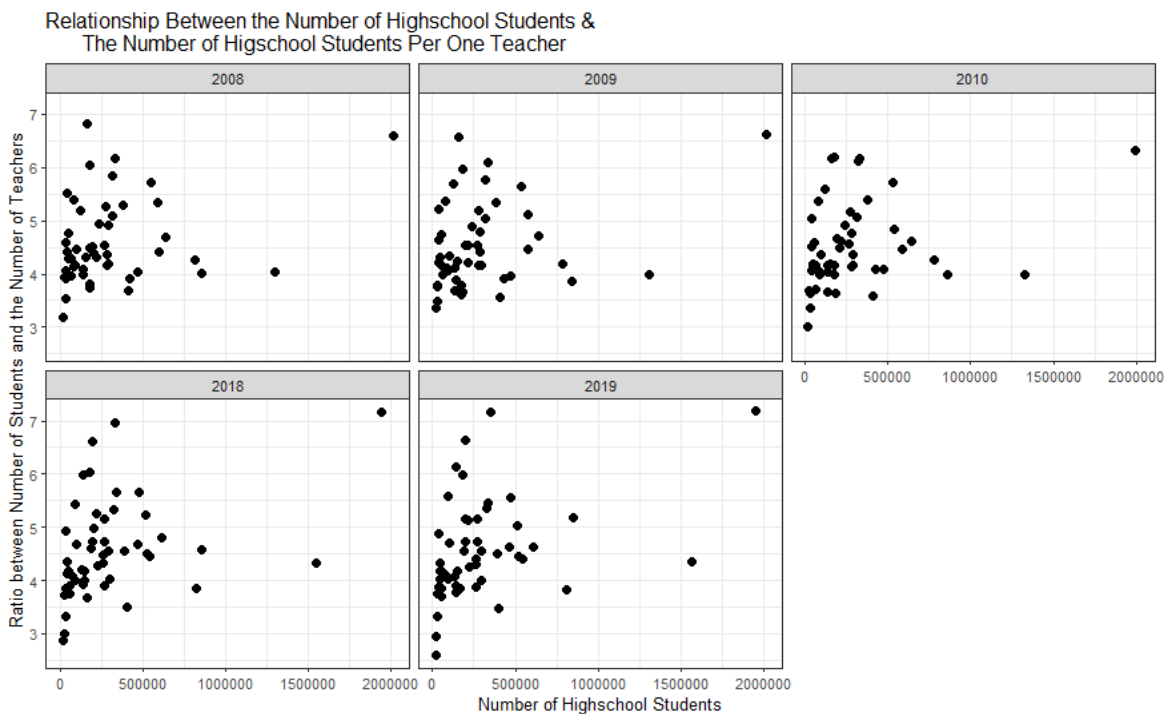# Visualization 2

```r
{r}
teachers_df %>%
  group_by(year) %>%
  summarize(n_teachers = sum(fte_teachers)) %>%
  arrange((n_teachers))


teachers_top5_num_df <- teachers_df %>%
                    filter(year == 2009 | year == 2010 | year == 2008 |
                          year == 2019 | year == 2018)

ggplot(teachers_top5_num_df, aes(x = pupils, y = pupil_per_fte_teacher)) +
  geom_point() +
  facet_wrap(~ year) +
  theme_bw(base_size = 8) +
  labs(title = "Relationship Between the Number of Highschool Students &
      The Number of Higschool Students Per One Teacher",
      x = "Number of Highschool Students",
      y = "Ratio between Number of Students and the Number of Teachers")

```



Relationship Between the Number of Highschool Students &
The Number of Higschool Students Per One Teacher

**Background Information**
- This particular visualization depicts the relationship between the number of high school students and the number of teachers per high school student.
- In simpler terms, it depicts the ratio between high school students and teachers during the years 2008, 2009, 2010, 2018, and 2019. The reason for selecting these specific years was to identify whether there was any significant correlation between years over a long period of time.
- In the final version of this draft, we plan on depicting this particular correlation throughout the years 2010 to 2023.

**Takeaways**

The type of the data driven story that we are showing in this visualization is **change over time.** The scatter plot between the number of highschool students and the ratio between the number of students and the number of teachers is changing its shape over time. In 2008, the scatter plot merely shows a clustered distribution at the left of the graph. However, as time changes, it is showing more of a logarithmic shaped distribution where the data is spreading more towards the upper region of the y axis. This shows a compelling story on how the ratio is increasing more distinctively over time rather than the change in the number of students. This reveals an interesting change on how the number of students that each teacher is dependent for is increasing. This can also correlate to lower academic achievement as each teacher is now more reliable for a larger group of students lacking their power to support a single student than before.