Schools_Comparison

Load the libraries

```
library(tidyverse)
```

```
## -- Attaching packages ------------------------------------------------------ tidyverse 1.2.1 --
```

```
## ✓ ggplot2 2.2.1     ✓ purrr   0.2.4
## ✓ tibble  1.3.4     ✓ dplyr   0.7.4
## ✓ tidyr   0.7.2     ✓ stringr 1.2.0
## ✓ readr   1.1.1     ✓ forcats 0.2.0
```

```
## -- Conflicts --------------------------------------------------------- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(readxl)
library(stringr)
library(ggplot2)
library(haven)
```

Analysis

Data published here by SEDA

```
df_dta <- read_dta('SEDA_geodist_long_GCS_v20.dta')
```

We only want to look at three districts so let's filter out the rest of them:

```
my_districts <- c("ORLEANS PARISH","CITY OF CHICAGO SD 299","DISTRICT OF COLUMBIA PUBLIC SCHOOLS")

df_out <- df_dta %>%
    mutate(leaname_upper = str_to_upper(leaname)) %>%
    filter(leaname_upper %in% my_districts) %>%
    arrange(leaname)
```

We won't include 2015, because it was a year of new assessments.

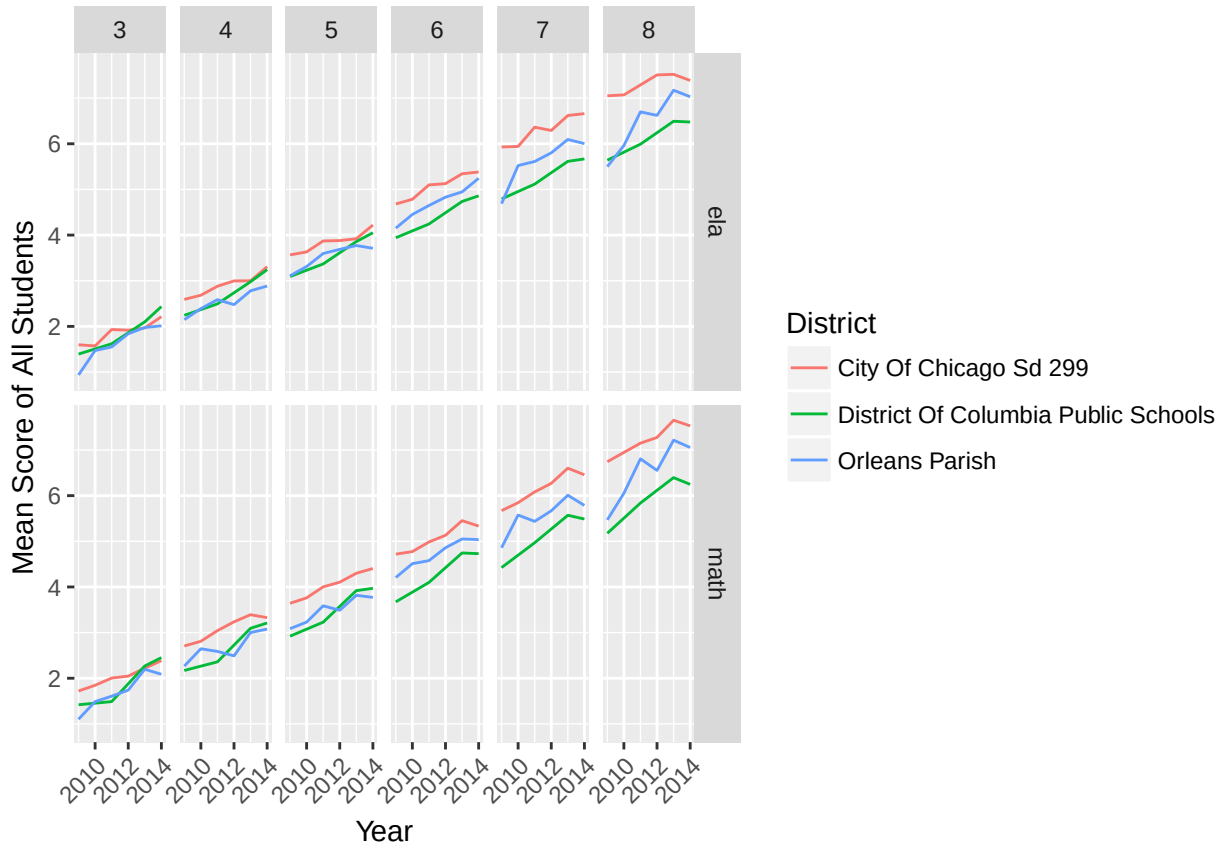
```
df_out_subset <- df_out %>% filter(!year %in% c(2015))
df_out_subset %>% glimpse()
```

```
## Observations: 216
## Variables: 39
## $ leaidC        <chr> "1709930", "1709930", "1709930", "1709930", "170...
## $ leaname       <chr> "City Of Chicago Sd 299", "City Of Chicago Sd 29...
## $ fips          <chr> "17", "17", "17", "17", "17", "17", "17", "17", ...
## $ stateabb      <chr> "IL", "IL", "IL", "IL", "IL", "IL", "IL", "IL", ...
## $ grade         <dbl> 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 4, 4, 4, 4, ...
## $ year          <dbl> 2009, 2009, 2010, 2010, 2011, 2011, 2012, 2012, ...
## $ subject       <chr> "ela", "math", "ela", "math", "ela", "math", "el...
## $ totgyb_all    <dbl> 32001, 32214, 31213, 31423, 30851, 30986, 31132,...
## $ mn_all        <dbl> 1.597191, 1.720642, 1.572117, 1.845812, 1.931615...
## $ mn_all_se     <dbl> 0.14739148, 0.12124196, 0.09684998, 0.08721643, ...
```

```
## $ sd_all        <dbl> 3.159255, 2.593755, 3.247897, 2.586029, 3.378734...
## $ sd_all_se     <dbl> 0.07293233, 0.06332534, 0.05740631, 0.04808306, ...
## $ totgyb_asn    <dbl> 928, 964, 982, 1035, 902, 932, 997, 1027, 1030, ...
## $ mn_asn        <dbl> 4.095689, 4.504245, 4.211643, 4.667687, 4.454506...
## $ mn_asn_se     <dbl> 0.1927982, 0.1868897, 0.1617529, 0.1756841, 0.19...
## $ sd_asn        <dbl> 3.281151, 2.883900, 3.456075, 3.112978, 3.812541...
## $ sd_asn_se     <dbl> 0.1427860, 0.1573327, 0.1408543, 0.1589379, 0.17...
## $ totgyb_blk    <dbl> 14550, 14531, 13827, 13784, 13212, 13176, 12722,...
## $ mn_blk        <dbl> 1.260178, 1.130168, 1.215614, 1.270489, 1.456941...
## $ mn_blk_se     <dbl> 0.15106164, 0.12681060, 0.10154004, 0.09208138, ...
## $ sd_blk        <dbl> 3.083815, 2.553443, 3.135371, 2.510727, 3.248704...
## $ sd_blk_se     <dbl> 0.07370292, 0.06412391, 0.05908000, 0.04901243, ...
## $ totgyb_hsp    <dbl> 13033, 13204, 13043, 13213, 13731, 13842, 14190,...
## $ mn_hsp        <dbl> 1.245870, 1.744030, 1.171013, 1.805823, 1.684956...
## $ mn_hsp_se     <dbl> 0.15112376, 0.12249752, 0.10158183, 0.08929969, ...
## $ sd_hsp        <dbl> 2.869291, 2.322670, 2.950595, 2.341725, 3.139457...
## $ sd_hsp_se     <dbl> 0.06906050, 0.05866296, 0.05591062, 0.04601131, ...
## $ totgyb_wht    <dbl> 2488, 2511, 2519, 2550, 2508, 2528, 2741, 2749, ...
## $ mn_wht        <dbl> 4.167921, 3.930198, 4.412086, 4.176728, 4.857538...
## $ mn_wht_se     <dbl> 0.16752344, 0.14126422, 0.12926109, 0.12085885, ...
## $ sd_wht        <dbl> 3.564386, 2.804929, 3.680453, 3.004087, 3.776433...
## $ sd_wht_se     <dbl> 0.11427842, 0.10119874, 0.10693515, 0.09969678, ...
## $ mn_wag        <dbl> 0.07223177, -0.57404661, 0.20044279, -0.49095917...
## $ mn_wag_se     <dbl> 0.2554120, 0.2342719, 0.2070566, 0.2132411, 0.24...
## $ mn_wbg        <dbl> 2.907742, 2.800030, 3.196472, 2.906239, 3.400596...
## $ mn_wbg_se     <dbl> 0.2255742, 0.1898328, 0.1643740, 0.1519403, 0.19...
## $ mn_whg        <dbl> 2.922051, 2.186168, 3.241072, 2.370905, 3.172581...
## $ mn_whg_se     <dbl> 0.2256158, 0.1869792, 0.1643998, 0.1502707, 0.19...
## $ leaname_upper <chr> "CITY OF CHICAGO SD 299", "CITY OF CHICAGO SD 29...
```

Here is a plot of the filtered data by grade and year:

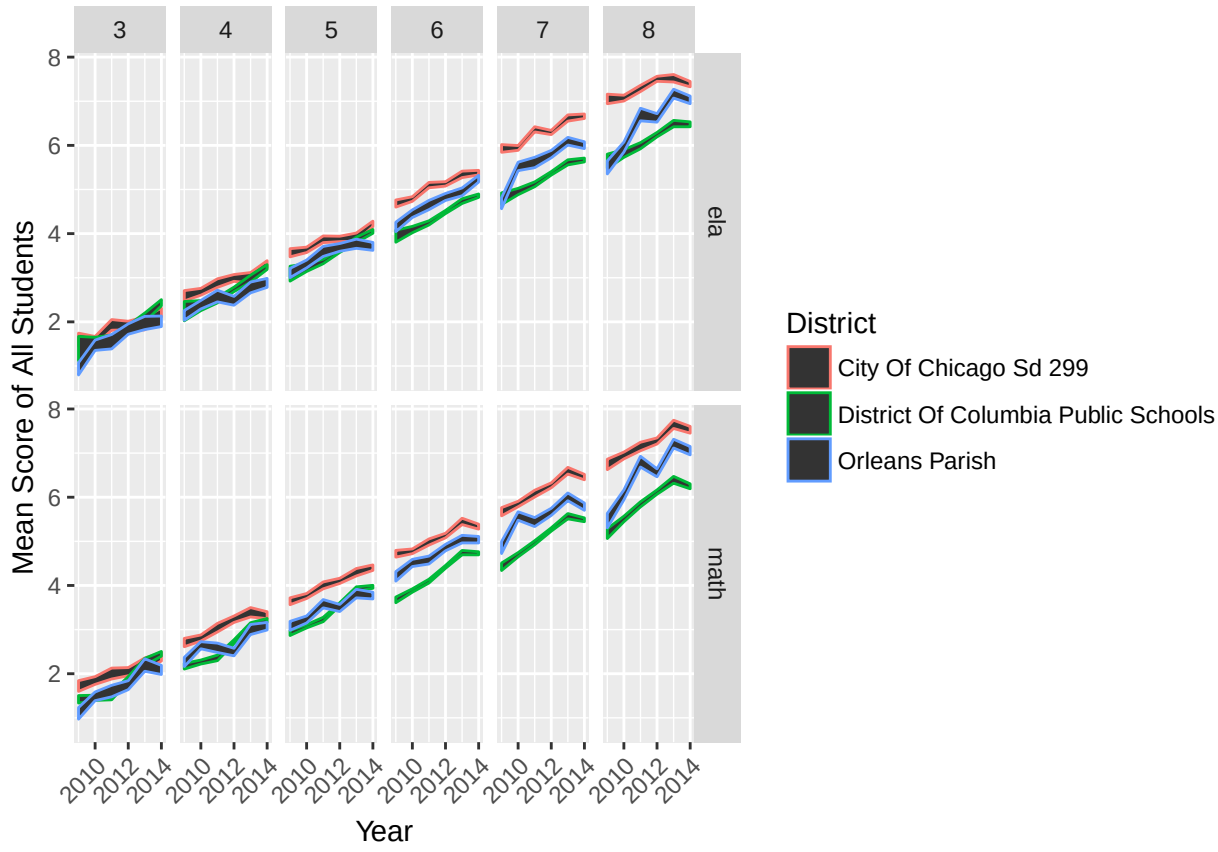
```
df_out_subset %>% ggplot(aes(x = year, y = mn_all, color = leaname)) +
  geom_line()  +
  facet_grid(subject~grade) +
  theme(axis.text.x=element_text(angle=45,hjust=1)) + scale_x_continuous(breaks=c(2008,2010,2012,2014))
  ylab('Mean Score of All Students') + xlab('Year') + labs(color = "District")
```




```
## Saving 6.5 x 4.5 in image
```

If we add in error bars (standard error):

```
df_out_subset%>% ggplot(aes(x = year, y = mn_all, color = leaname)) +
  geom_line()  +
  facet_grid(subject~grade) +
  theme(axis.text.x=element_text(angle=45,hjust=1)) + scale_x_continuous(breaks=c(2008,2010,2012,2014)) +
  ylab('Mean Score of All Students') + xlab('Year') + labs(color = "District") +
  geom_ribbon(aes(ymin = mn_all - mn_all_se,ymax = mn_all + mn_all_se))
```




```
## Saving 6.5 x 4.5 in image
```