PISA DATA EXPLORATION

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Investigation Overview

I'm interested in which variables have more affect on students' skills in positive way or negative way.I also want to look at from which countries students attended Pisa. I think internet usage, teacher change and teaching type may affect students' skills. I also want to look at which gender is more tend to the skills.
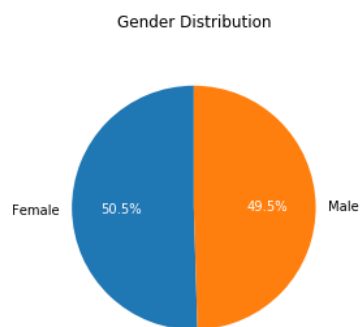
Dataset Overview

I used Pisa 2012 Data which provided by Udacity for this project. PISA is abbrevation of Programme for International Student Assessment. PISA is a worldwide study developed by the Organisation for Economic Co-operation and Development (OECD) which examines the skills of 15-year-old school students around the world. The study assesses students' mathematics, science, and reading skills and contains a wealth of information on students' background, their school and the organisation of education systems. There are 485490 students in the dataset. There were 636 columns in the dataset and lots of them had detailed information that will not be used for this project so i removed them and create new dataframe.

How is the gender distribution?

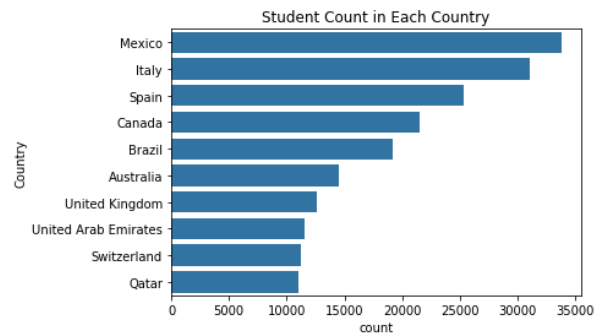Gender Distribution

Female 50.5%   49.5% Male

Female and male student counts are close to each other so it's possible to have a sensible analyze about gender.

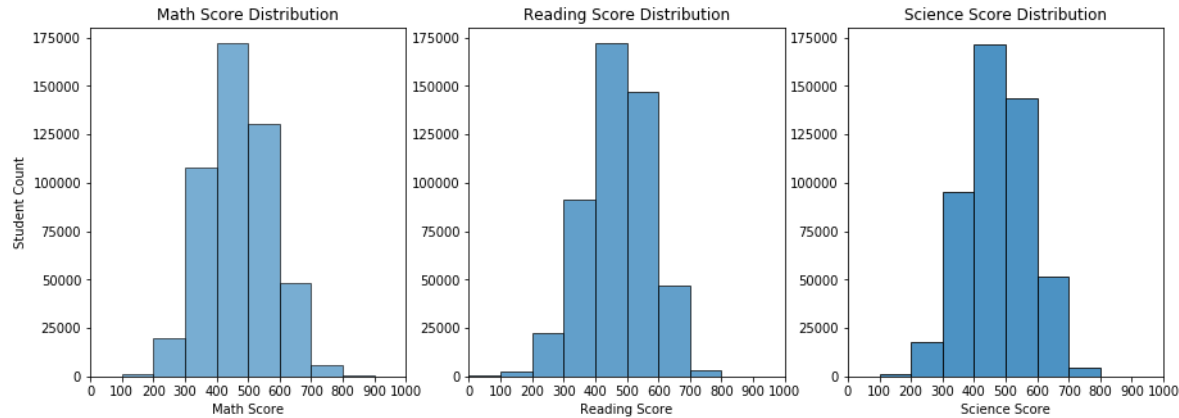# From which countries students attended more?

Mexico,Italy,Spain,Canada,Brazil have students over 15000.They have the biggest part of the data
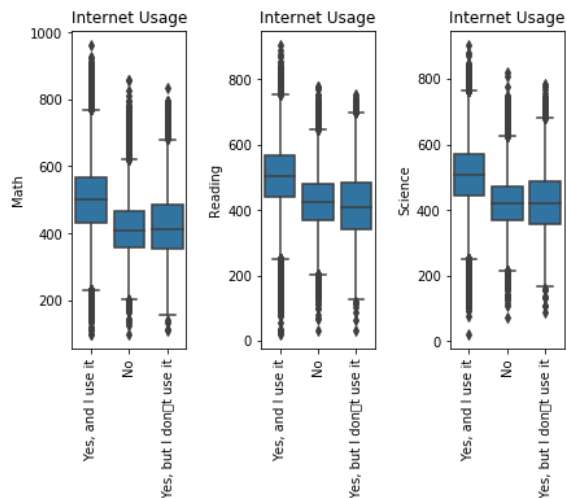
How are the skills' score distribution?

- All scores have normal distribution.
- Lots of students have scores between 400 and 600. Genaral trend of scores for all the skills is between 300 - 700.
- There are some students who have reading score under the point of 100 and math score over the point of 800.But the number of those students is low.

Is there any relationship between internet usage and student skills?

Internet usage have some affect on skills. We can say the students who use internet for research can get more points on all skills.

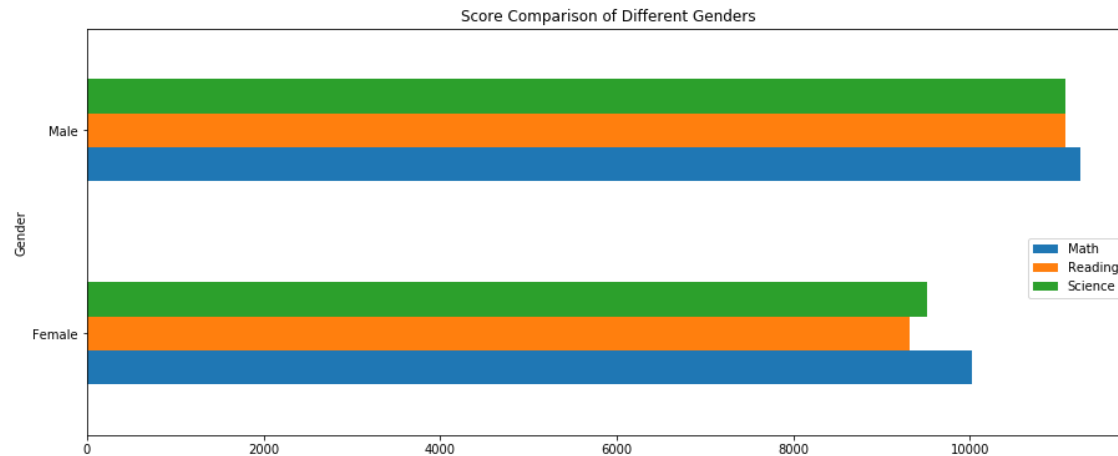# Which gender is more tend to the skills?

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Out[11]:  (array([    0.,  2000.,  4000.,  6000.,  8000., 10000., 12000.]),
          <a list of 7 Text xticklabel objects>)

          <Figure size 3600x1440 with 0 Axes>
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Score Comparison of Different Genders

Male students more succesful on all skills.

Does teacher change have an effect on student scores?
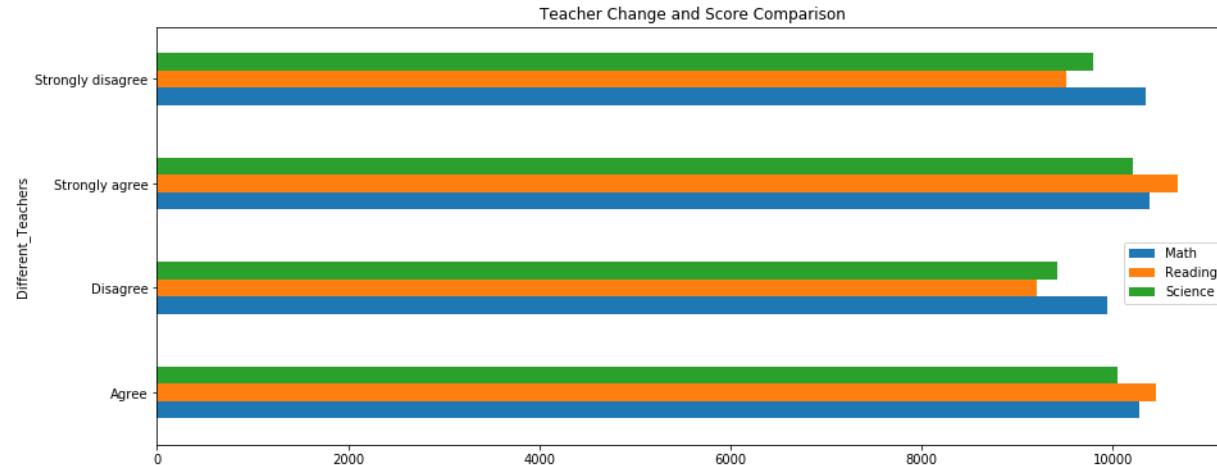
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Out[12]:  (array([    0.,  2000.,  4000.,  6000.,  8000., 10000., 12000.]),
          <a list of 7 Text xticklabel objects>)

          <Figure size 3600x1440 with 0 Axes>
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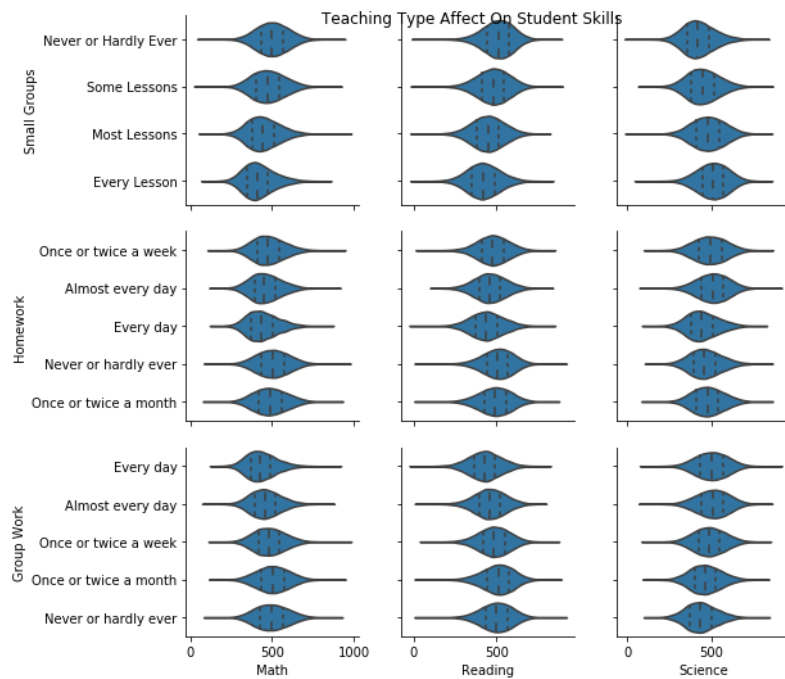

We can't exactly say that teacher change have an affect on math score. But when it comes to science and reading, we can see that if theacher changes, scores go over.

How teaching types affect student skills?

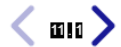Teaching Type Affect On Student Skills

Explanation of this visalization is in the next slide.

- Math scores are better when students study individual. Students learn math more when they are in the class.
- Work with groups doesn't the best way to improve reading skill. Homeworks may create good affect on skills if they are not given by teachers very frequently.
- Both small group and large group works are very useful for science. Homeworks also increase their skills if they are not given every day. Everyone needs break sometimes.

THANK YOU