

Washington State K-12 Enrollment, 2012-13

Understanding the Scope of the Issue

k12eddata

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Introduction

A Crises at Hand

A group of concerned citizens sued the State of Washington, claiming the state was not fulfilling its duty to provide an ample education for children in grades Kindergarten through 12th (ages 5-18). This coalition of parents, concerned citizens, school districts and other parties thought Washington state spent too little on public education. In 2012 the Washington Supreme Court agreed with them and directed the Washington State Legislature to fulfill its state Constitutional obligations. [What is the McCleary decision?, Summary of Washington Supreme Court's McCleary v. State Decision](#)

Two years later in September 2014 the court found the legislature in contempt for not making significant progress in funding children's education. The legislature has until the end of this year's 2015 session to "purge the contempt" and make significant progress toward increasing funding. Otherwise the court will impose penalties. This year's regular session finished on April 26, 2015. The first special session ended May 28, and the second extended session ends June 28. The state's fiscal year ends June 30. [Washington Supreme Court Finds State In Contempt, Inslee Calls Second Special Session Of Washington Legislature](#)

Where's the Money?

Washington state, located in the northwest corner of the contiguous 48 states of the United States of America, had more than 1002850 full-time enrolled (FTE) students in 2012-2013. According to the U.S. Census Bureau, the state's population was 6,724,540 in 2010. In that same year, Washington ranked as the 14th largest economy in the U.S., behind Massachusetts and ahead of Maryland. [Washington QuickFacts from the U.S. Census Bureau, Washington GDP size and rank](#)

But when considering state and local spending on educating children, Washington ranked **19th from the bottom** of the 50 states, below the national average and well behind Maryland and Massachusetts, which ranked **7th and 8th from the top** in public education spending, respectively. [A Citizen's Guide to Washington State K-12 Finance](#)

Shining Light on the Issue

This application is the first baby step in shedding light on the scope of public education in Washington State. It imports levy dollar funding and FTE student data and examines the FTE numbers for each school district, grouping them by county.

I chose to start with the numbers of children because educating children is the state's **paramount duty**. [Washington State Constitution](#)

SECTION 1 PREAMBLE. It is the paramount duty of the state to make ample provision for the education of all children residing within its borders, without distinction or preference on account of race, color, caste, or sex.

Please open the application and begin your own exploration.

Getting Started

Open the application

Using your web browser, navigate to the application's hosted site and open the file [Washington State K-12 Enrollment](#). The application is a Shiny web app generated using R Markdown and Shiny.

To read the promotional slideshow, generated using R Markdown and Slidify, open the project directory on github, [Washington State K-12 Enrollment](#).

This user documentation, [Getting Started User Guide](#), was created with R Markdown, Knitr and Pandoc. It is available from a link in the Shiny web app.

One screen, four sections

The application has one screen with four sections, marked with red numbers in the screenshot below (Figure 1). Section 2's contents remain constant through the application's operations. The county figures in sections 3 and 4 change with each county.

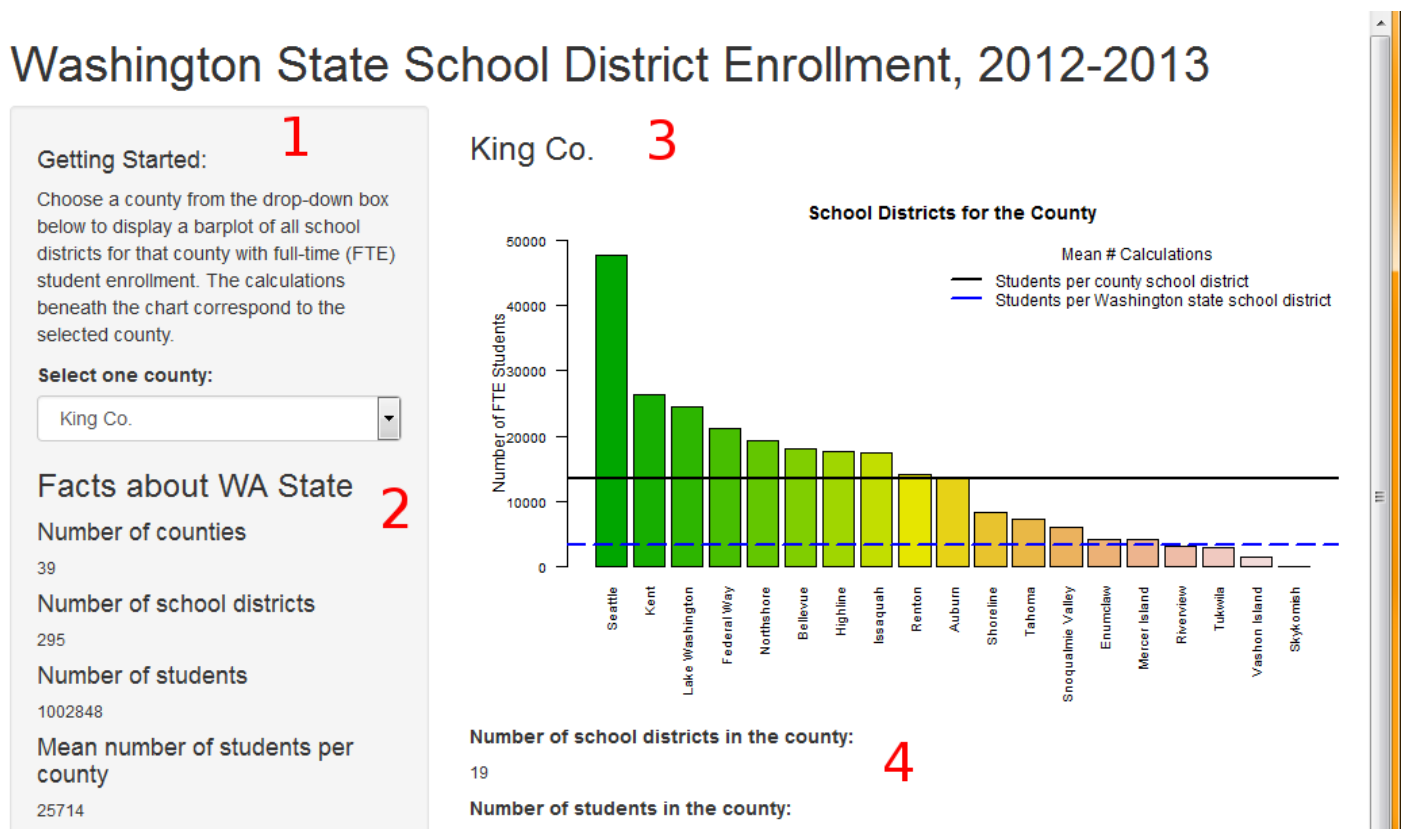


Figure 1: Splash screen

To see larger individual screenshots, please see the *Appendix* at the end of this document.

1. Instructions and county selection widget The “Getting Started” section provides brief instructions. (Figure 3) Foremost is the concept that you examine the school district enrollment data through a county lens. “Select one county” from the drop-down menu to change the graph and county-based student calculations.

2. State figures, data attribution and help links On the lower left side of the screen is constant data about the state pertaining to FTE enrollment. (Figure 4) The bottom provides the attribute and link for the source data, “Report 1061,” and user help documentation and promotional material links. Upon activation, the application performs the following calculations:

- Counts the number of unique counties and school districts in the state,
- Sums the number of students in the state, and
- Calculates the mean number of students per county and school district across the state.

3. County bar graph with school district enrollments A bar graph dominates the upper right section of the screen. (Figure 5) It takes a subset of the data for the selected county and creates a bar graph of FTE student enrollment numbers by school district for that county. The chart shows the school district with the largest number of students on the left and scales the graph to the smallest number of students on the right. School district names are perpendicular to the bottom axis. The blue hash line marks the mean number of students per school district across the state, while the black line marks the mean number of students per school district in that county.

4. County figures and percentages relative to state figures The last section in the bottom right presents calculated county-based figures (Figure 6):

- The number of school districts for the county,
- The mean number of students per school district for the county, and
- The percent of school districts and students across the state this county holds.

Using the Application

Select a County

To select a county, click the drop-down box under “Getting Started” in the upper-left section of the screen:

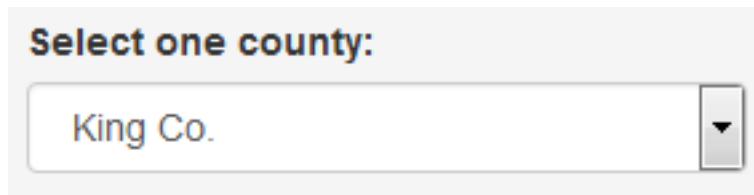


Figure 2: Select one county drop-down box

When you select a county, the application redraws the bar graph (section 3) and recalculates figures for that county, comparing it to statewide figures (section 4).

The bottom of the graph shows the names of school districts in that county. The vertical axis is the number of FTE students. The bar plot for the school district with the largest number of FTE students is on the left.

The default county is King County, which includes the city of Seattle, the largest city in Washington state with an estimated 2013 population of 652,405. [Seattle \(city\) QuickFacts from the US Census Bureau](#)

Note: Some counties have only one school district due to the small number of students.

Explore Enrollment Figures

With 39 counties and 295 school districts, Washington state has much to explore.

The interface is quick and responsive, so you can see graphs and figures for many counties in a short span of time. To start, examine the five largest and smallest counties by number of FTE students.

The five largest counties:

##	county	FTE_students
## 17	King Co.	257305
## 27	Pierce Co.	122556
## 31	Snohomish Co.	102920
## 6	Clark Co.	74698
## 32	Spokane Co.	70146

The five smallest counties:

##	county	FTE_students
## 30	Skamania Co.	1132
## 10	Ferry Co.	995
## 7	Columbia Co.	464
## 35	Wahkiakum Co.	417
## 12	Garfield Co.	312

More Ways to Explore

Compare the counties in the Puget Sound, such as Pierce or Snohomish counties, to those on the east side of the Cascade Range of mountains, for example Yakima or Lincoln counties. As a reference, see the Washington State map. [Washington County Selection Map | U.S. Census Bureau](#)

Moving Forward

We'll know by June 28, 2015 if the legislature meets its Constitutional obligations.

Please email suggestions about enhancements for this application to [k12eddata](#). Possibilities include the following:

- Map-based graphical user interface (GUI)
- Public education funding sources and amounts, e.g. state general funds vs. local levies
- Congressional, legislative and city boundaries
- General population numbers
- Population vs. square miles
- Urban vs. rural
- Enrollment numbers and other figures spanning multiple years
- Statistical comparisons
- GUI that enables users to import other states' data and make comparisons

Acknowledgements

This application was made possible through the use of publically-accessible data collected by the Office of Superintendent of Public Instruction (OSPI) for the state of Washington. [OSPI](#)

References Embedded Within the Document

Getting Started:

Choose a county from the drop-down box below to display a barplot of all school districts for that county with full-time (FTE) student enrollment. The calculations beneath the chart correspond to the selected county.

Select one county:

King Co.

Figure 3: Splash Screen | Getting Started

Facts about WA State

Number of counties

39

Number of school districts

295

Number of students

1002848

Mean number of students per county

25714

Mean number of students per school district

3399

Data for this application is from the Washington State Office of Superintendent of Public Instruction, Report 1061.

[School District Property Tax Levies, 2014 Collections](#)

Figure 4: Splash Screen | Facts about WA State

King Co.

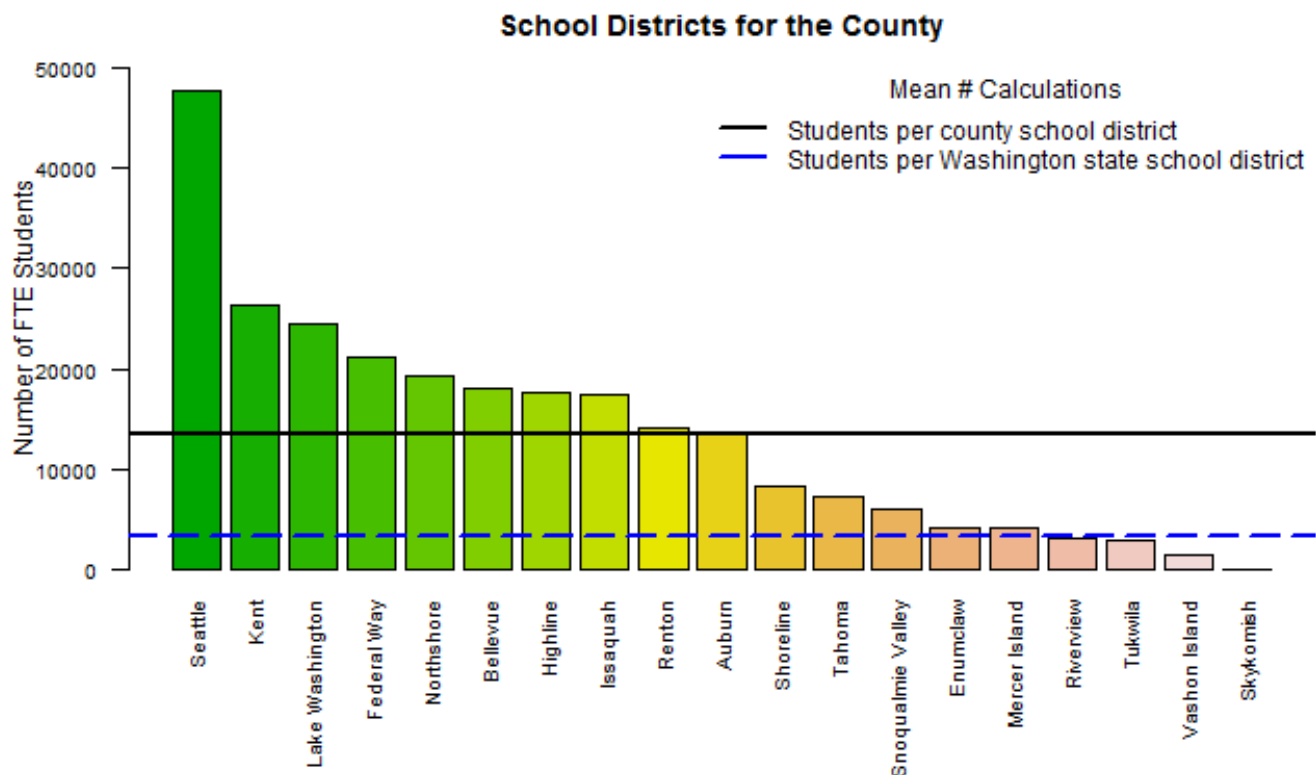


Figure 5: Splash Screen | School Districts for the County

Number of school districts in the county:

19

Number of students in the county:

257305

Mean number of students per school district:

13542

Percent of school districts in WA state:

6

Percent of students in WA state:

26

Figure 6: Splash Screen | Number of School Districts in the County