

Center for Excellence in Education
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Resources for using linguistics to teach the scientific method

A page with several papers on this can be found here:

<http://web.mit.edu/waoneil/www/k12/>

I found the set by Honda, O'Neil, and sometimes Pippin from 1993-2010 most useful.

A set of lesson plans, including one for the plural exercise we did in the session can be found here:

<http://www.teachling.wvu.edu/node/70>

That site also has a lot of other lesson plans and other resources for using linguistics in the classroom.

<http://www.teachling.wvu.edu/>

While many of these may be specifically geared towards teaching linguistics, some of them can be profitably used for teaching scientific investigation.

Moreover, these exercises could be a way to start some interesting, and perhaps unexpected, collaborations on scientific investigation with English and Language departments at your school.

Resources for statistics

We did an exercise in the session about regression to the mean, a universal and usually overlooked phenomenon. I have set up a web page and an applet where you can do this exercise with your class, enter your data, and immediately see the data for your class and for all classes that have done it. The more classes that participate, the richer the data will become.

You can find the site and the information here:

<https://ucsdbiostats.shinyapps.io/RegressionExercise/>

Note that this applet is written using R and Shiny (see below).

Fathom (<http://concord.org/fathom-dynamic-data-software>) is a free, graphical, statistical software package. Unfortunately, it looks like it may no longer be

available after June 15, 2015, so download it now and save it for your students. It facilitates interactive exploration of data by your students so that they can gain some intuition for data and statistical tests.

R (<http://r-project.org>) is the premier statistical software package in the world. It is also free and isn't going away anytime soon. There are some GUIs for R that make it easier to use (e.g. <http://www.rcommander.com/>), but it definitely has a learning curve. On the other hand, there are lots of books out there on how to use R and how to teach elementary statistics with R, and if you want to know how to do something in R you can search on the web and you will find an explanation – usually quite detailed and complete. Some nice online resources for learning R are: <http://tryr.codeschool.com/>, <https://www.datacamp.com/>, and <http://www.rstudio.com/resources/training/online-learning/> or you could just search 'learning R'.

If you do use R I would highly recommend you use RStudio (<http://www.rstudio.com/>). RStudio is a very well-designed environment in which you can run R. The folks behind RStudio also have made an R package (a set of functions in R) called Shiny that let you make interactive web applets in R. This is really nice.