

QL Summer Workshop Colby-Sawyer May 29-June 1, 2007
 Developing QL Module Worksheet
 By Robin Davis

Name of Course	Pathway -- Awakening the Best: Invoking the Citizen Leader
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Course Level	101
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Possible subject Areas	Political Science, Sociology, Writing
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Identify quantitative concepts/skills that students will develop	<p><u>Mathematical Skills</u></p> <ul style="list-style-type: none"> • Mean • Median • Mode • Standard deviation • Reliability • Validity • Weighted average <p><u>Applied QL Skills</u></p> <ul style="list-style-type: none"> • Analyze a logical argument and its premises and detect fallacies. • Read, understand, interpret, use, and communicate quantitative information. • Understand and employ basic statistical concepts <ul style="list-style-type: none"> ▪ Measures of central tendency (Mean, Median, Mode) ▪ Measures of Variation (Standard deviation) ▪ Read and interpret statistical tables and graphs • Be able to communicate quantitative information effectively in spoken and written form. • Use various sources, including technology, to gather, analyze and present quantitative information. • Recognize that statistical methods have limits.
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Overview	Students are presented with a graph or article supporting a political candidate's
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	<p>agenda. They will analyze the information and answer a series of questions designed to help them interpret the information. They will continue their examination outside of class finding the original source of the data for further information.</p> <p>After this initial exercise, the students will find an example of a candidate's use of data to promote his/her agenda. They will examine it as we modeled in class and will write a research paper arguing whether the data does or does not support the candidate's claim.</p>
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<p>Describe/List the measurable outcomes or learning goals of your activity</p>	<ul style="list-style-type: none"> • Recognize and understand basic statistical terms • Report and interpret findings from research • Critically assess popular press articles • Detect logical fallacies • Use Microsoft Excel to create tables, formulas and graphs
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MAIN ACTIVITY

In-Class Activities/Presentations (will also be made available on course Blackboard site)

- Students are presented with an article presenting a presidential candidate's position on a certain issue in graph or numerical form.
- Students generate a list of questions about the data; for example:
 - What is the source of the data?
 - What is the number of participants?
 - How were they chosen?
 - What is the population?
- Presentation on
 - Definitions of common statistical terms (mean, median, mode, standard deviation, variance, margin of effort, validity, and reliability).
 - Activity identifying mean, median, mode, standard deviation, margin of error.
 - Discussion of Gallup polling and sampling.
 - Discussion of false correlations and logical fallacies, causality/correlation/covariance/coincidence.
 - Activity demonstrating false correlations.
- Presentation of example for analysis

Out of Class Assignment

Media Savvy Assignment: We have been discussing leaders' uses of the media and propaganda to advance their images or agendas. As we discussed in class, statistical information can be interpreted or misinterpreted to suit a leader's position and must be examined carefully. For this assignment, you will do just that.

Step One: The attached table is information provided by the Tax Policy Center and it is this table President Bush referenced in his February 19, 2004 "Remarks by the President on the Economy" [Presidential Hall, Eisenhower Executive Office Building]. Carefully read through the table to complete this assignment.

Step Two: Identify the possible ways the data could be interpreted or misinterpreted by reviewing the data, creating a spreadsheet, and responding to these questions:

1. What is the median income according to the data? [Hint: Remember that median is the value selected so that that half the incomes are larger and half are smaller. What value is that on the

table? (Hint, 50% will be lower and 50% will be higher. In what bracket is that value? It will be a bracket, not a value)]

2. What is the tax change (percentage and dollar amount) for those in the median income range? [Hint: Values in parentheses indicate decreases. To get the percentage change, you will need to divide by the income, but it is a bracket. What value do you think makes the most sense to divide by?]
3. Factor what percentage of each brackets' income the tax cut represents. What income group gets the most tax relief (percentage and dollar amount)?
4. What is the average tax break? [Hint: Here, you cannot just add up the last column because there are different numbers of people in each bracket. You need to weight the average by the number in each category. You can do this by multiplying the tax break by the percentage that will be getting it, then add up that column. The total will be the weighted average.]

Step Three: Using your spreadsheet,

1. Create a graph displaying the percentage of households in each of the income categories. Add the percentage and dollar amount of tax break in each category.
2. Based on your graph, who is getting the best deal?

Step Four: Write a paper from the point of view of a candidate. Take a stand on the issue and use the data go promote your position. What information do you present in your speech to the press if you are in favor of the tax cuts? What information do you present if you are against the tax cuts? You will need to present, describe, and analyze the data in detail to provide adequate basis for your argument.

Format: This is an argument paper and should be structured as such. A minimum of one source will be required to write this paper and probably two sources will be used (the popular press presentation of the data and the original source of the data). The paper should be approximately five pages in length and utilize the Chicago style for proper documentation, refer to your *Blair Handbook* for more information

Assessment: I will be assessing your knowledge of basic descriptive statistics and your accurate use of statistical concepts in your analysis in addition to your argument.

Describe how you plan to assess the effectiveness of this module

Students will be given a basic pre and post test to assess their knowledge of basic statistical concepts and terms and their application. The argument paper will help me assess the extent to which they are able to apply this knowledge to everyday media and quantitative literacy.

Helpful Resources

Websites:
Political Arithmetik: <http://politicalarithmetik.blogspot.com>
Church of the Flying Spaghetti Monster: <http://www.venganza.org>
A journalist's guide to interpreting statistics: <http://www.robertniles.com>
Gallup Poll FAQs: <http://www.galluppoll.com>
FactCheck.org:
http://www.factcheck.org/here_we_go_again_bush_exaggerates_tax.html