



Brazosport College

# Gator Stats

The Office of Institutional Research (OIR)

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## Be careful with the data you take to the dance

We have all heard of the book entitled *Lies, Damn Lies and Statistics*. We have also heard the expression "You can find statistics to say anything." Statistics are not easily understood and misused so frequently, many distrust them. When scanning the literature that includes some statistics, it behooves the reader to examine those statistics very carefully. It is true, however, that numbers do not lie, but there are some that use data to benefit their agenda. One way to guard against your being misled is by learning when data are used correctly. In general, data are used to infer, validate, and/or answer a research question. The following examples show how data are used to mislead even though it may be nearly impossible in many cases for the casual reader to uncover the statistical flaw.

A mechanical juicer was advertised to extract 26% more juice. It extracted more than what? If this was a comparison to a hand juicer, comparable products were not used. More car accidents occur during clear weather than foggy weather; therefore, it is safer to drive in the fog. A study once showed that students who smoke have lower grades and concluded that smoking caused lower grades. Around 1949, Yale surveyed their graduates and found that their average salary was \$25,111, a very good wage in those days. Seemed like a good reason to attend Yale rather than some other institution.

Examples like the above abound. Bad statistics are the result of bad methodology such as not having a random sample, comparing apples and oranges, thinking that there is a relationship between correlation and causation, and using anecdotal data (myths). For instance, some will say that students go to Alvin for math because it is easier to get a good grade than at Brazosport College. How many students did transfer and was the primary reason easier math courses? (Note: Brazosport College and ACC did some comparisons and did not find a significant correlation. Even if the grade distributions did favor ACC, can you see the fallacy of the inference?) Anecdotal data are simply data collected serendipitously such as - I have had students tell me .... The inference could be correct but in general, inferring causation from anecdotal data is dangerous.

To avoid relying on anecdotal data, the OIR administers several surveys each year to collect data to learn about our strengths and weaknesses, using those data as a basis for improvement. The power of the results is based primarily on how well the sample (returned surveys) represents the student population. Usually, the return rate for the satisfaction survey is less than 40 percent. With this low of a return rate, the sample is usually not representative of the population with respect to at least one attribute such as gender or ethnicity. It has been very difficult to get a representative sample of the student population for several reasons. The second most frequent reason given for not getting the desirable number of usable surveys returned is that students are simply not in class when the survey is administered. The number one reason for a low return rate is the reluctance of the faculty to use valuable class time for the students to complete the survey. Although this seems to be a valid reason, there are some undesirable consequences. If the data are to be used for showing reality, Brazosport College simply must find a more attractive methodology to get surveys completed and returned that represent the student population.

**Factoids** in celebration of Veterans Day: November 11:

**24.5 million** people are veterans in the United States

**1.7 million** veterans are women

**9.5 million** veterans are age 65 or older

**\$59.6 billion** is the total amount of federal government spending for veteran benefits programs in fiscal year 2004.

From the upcoming *Statistical Abstract of the United States: 2006*

## National Community College Benchmark Project

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#### What can we do for you?

If you need our assistance to help design, construct, administer, or scan a survey or help in the analysis of the data collected by a survey, please feel free to call the OIR for assistance. If you would like to have the OIR produce a specialized study or report, please contact us. The OIR does and can help with writing grant proposals. Presenting the results of analysis to an internal or external group is also something the OIR is more than happy to do.

**The OIR request form is located at [www.brazosport.edu/~ir](http://www.brazosport.edu/~ir)**

Got a question that requires an analysis of student data? Call the OIR or visit [www.brazosport.edu/~ir](http://www.brazosport.edu/~ir)

Brazosport College has participated in the National Community College Benchmark Project (NCCBP) the past two years and plans are to continue participating at least one more year. The primary objective of this survey is to determine community college benchmarks that are used for comparisons.

Some of the more interesting comparisons are in the table below.

The complete report can be found at <http://www.brazosport.edu/~ir/newreport.html>

Benchmark Item	Brazosport College	Median for all Colleges
% Transfer Credit Hours	60%	57%
% Technical Credit Hours	30%	32%
% Developmental Credit Hours	10%	11%
Tuition Fees/Hour	\$34	\$78
% Funds from Local Sources	9%	24%
% Funds from State	46%	32%
% Funds from Tuition	45%	35%
Next Term Persistence	67%	68%
Fall-Fall Persistence Rates	43%	47%
Math Retention Rates	65%	83%
Math Completer Success Rates	68%	71%
Credit Student Market Penetration	4.25%	3.21%
Non Credit Student Market Penetration	1.21%	2.00%
Average Credit Section Size	21	20
Credit Course Student/Faculty Ratio	17.7	18.3
% Sections taught by Full-Time Faculty	72%	50%
Distance Learning Withdrawal Rates	23%	18%

Recommended reading:

*From Black Box to Pandora's Box: Evaluating Remedial/Developmental Education.* W. Norton Grubb, David Gardner, School of Education, University of California, Berkeley.

(Can be found at the National Community College Research Center website.)

In most cases, Brazosport College compares favorably with other colleges. One hundred and nine colleges participated in the study; five of these were Texas community colleges. Some of the benchmarks required data that Brazosport College did not collect.

A similar project to the NCCBP is the Kansas Study. It also collects benchmark data but restricts the data collection to finances. That report can also be found on the OIR website.

*If you have an interest in a research topic to be included in this newsletter, please let us know. If you would like to contribute an item for inclusion in the newsletter, please send it to the OIR for consideration.*

**Reminder!!! If you wish to submit a request to the OIR— please use the online form at <http://www.brazosport.edu/~ir>.**