

DATA TALK!

ARE YOU *really* LISTENING?

When Mark Twain said *there are lies, damn lies, and statistics*, it's likely because someone had tried to *put words in the mouth* of a number rather than listen to what the number actually said.

TO UNDERSTAND WHAT DATA TELL, IT IS FIRST NECESSARY TO SPEAK THE LANGUAGE.

- **Sample** is a specified number of people that are drawn from the entire universe or target population.
- **Method** is the statistically reliable manner in which a sample of the target population was gathered.
- **Survey Instrument** is the tool that was used to measure the information.
- **Construct** exactly identifies the objective of gathering the information.

The test scores of 200 students (sample) were collected from the report the testing service provided the school district (method) and the pass-fail scale established by the service (instrument) was used to determine the number of students who passed the test to measure student progress since they were last tested on this material (construct).

INTERPRETATION OF THE RESULTS CAN ADD MEANING TO WHAT THE DATA ARE SAYING.

- Interpretation of the results provides **descriptions** about the sample.
- Data from another sample can be use to make **comparisons** between two samples.
- **Factors** that influence data can reveal differences that occur within results.
- Same types of data collected over a period of time, consecutive years for example, can be used to show a **trend** over time.

Only 10% of the students passing the test in this school district were female (description) but statewide results report 27% of all passing students were female (comparison). The female students had only instruction from their classroom teacher; however, the male students were required to complete a tutorial in the computer lab (factor). Although the total number of students passing the test has remained flat over the last five years, the high percentage of male students with a passing score has increased 10% or more each year during the five-year period (trend).

DATA-DRIVEN DECISIONS CAN ONLY BE AS GOOD AS THE DATA USED TO MAKE THE DECISION(S).

1. *Know the definitions of the words used to describe the meaning of the number.*

- The **count** is the actual number of events included in the sample.
- The **mean** is the average number.
- The **median** is the middle number.
- The **mode** is the most frequent number.
- The **rate** describes the relationship between the actual number of events in the sample population to the total population from which the sample population is taken.
- A **percentage** can be calculated when rate is established per 100 individuals in the total population.

2. *Look at the size of the sample.*

In some geographic areas, the population is so small it is impossible to accurately represent the impact of a particular event. This is particularly true of indicators such as infant mortality and accidental deaths of children and teens.

Reporting data in percentages, while accurately reflecting the incidence of a particular event, can overstate the impact of a small number of events occurring in a small population.



KIDS COUNT Mississippi reports certain data in rates to better represent reality at the county and state level.

KIDS COUNT Mississippi often reports data in percentages and frequently calculates the percent of change over time to show trends; however, the count is also reported when percentages are used to better represent the impact of the related events.

SOME DATA SPEAK MORE CLEARLY THAN OTHERS.

A **median** number may be better than an **average** when attempting to identify the significance of a particular data point, particularly when there is a wide range of data points.

Only similar data can be compared – commonly stated as *comparing apples to apples, not apples to oranges*.

Consistent ranking at the same level could be due to no change or to a large upward change in one area and downward change in another.

Ranking can also change because of big changes in one area or small changes in many areas.

DATA DO NOT ALWAYS TELL THE WHOLE TRUTH AND NOTHING BUT THE TRUTH.

Even reliable data sources make errors in calculation or errors in judgment. Is there data from another source that can be used to verify the accuracy of the data?

Think about what the data is not telling. If data were reported in full and not in part, could the resulting finding have been different? Would it have supported a different position?

DATA ALONE DO NOT JUMP TO CONCLUSIONS.

Data outcomes can only reveal information on the subject measured. Do all outcomes track to data measured on the subject?

Correlation does not equal causation. Is there evidence to suggest cause or just correlation requiring further investigation to determine if it is possible to identify causation?

TALKING DATA IN MISSISSIPPI IS NOT ALWAYS EASY TO UNDERSTAND.

The State's population is low in number and widely and unevenly dispersed. The likelihood of error is greater when the size of the population is smaller.

WE ARE HERE TO SERVE YOU AND HELP YOU IN ANY WAY WE CAN.



Use the “send a message” and “ask a question” features on the Center for Data on Mississippi’s Children and Families at www.mfcf.org/datacenter to communicate a concern or ask a question.