

Impact of Student Perceptions on STAT 101

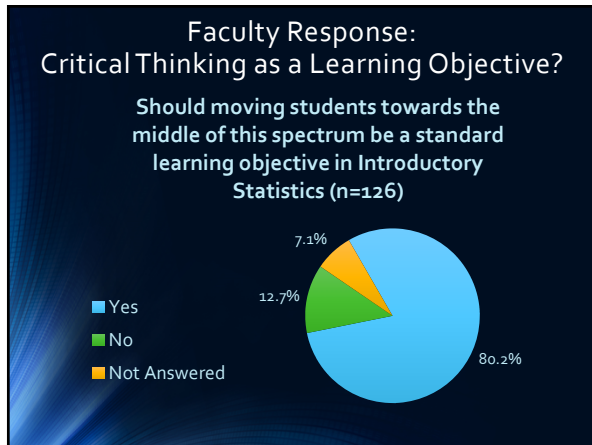
Awestruck Students

- See a jumble of methods, techniques, formulas
- Desire for 1 correct answer
- Focus on #'s as pure facts
- Unaware of influences on data and statistics

Cynical Students

- Believe numbers are modified on a whim
- Lack appreciation for scientific method
- Tend to dismiss statistics based on the source

Ultimate Goal of Intro Statistics:
Developing the habit of mind to evaluate statistical evidence in a critical manner.



- ### Recommendations
1. Ask your students where they stand on this spectrum before and after the course.
 2. Educators should include "Thinking Critically about Numbers" as a learning objective in introductory statistics courses.
 - Awestruck students need to see the variety of ways that statistics can be influenced in the process flowing from the "Where Do Statistics Come From?" question
 - Cynical students need to see the process as a logical process that they can evaluate at each step

Conclusions

The primary goal of Intro Statistics should be to develop the habit of mind to evaluate statistical evidence in a critical manner.

Students should recognize that choices made in creating a statistic influence its value, its statistical significance and its usefulness.

Leaving STAT 101 without being critical consumers (e.g. naive or cynical) of statistical information will disadvantage students in the future.

Realities / Challenges:
Not an easy task. Can't outsource critical thinking. It takes time, teacher role modeling and lots of practice.

Balance is required to prevent converting Awestruck students into Cynics with the presentation of bad practice.