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Civic Engagement: Numbers in the News

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www.StatLit.org/pdf/2007SchieldAACU6up.pdf

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Civic Engagement Programs Analytical Reasoning

All civic engagement courses involve arguments.

Most of these arguments are about values, the future or the causes of things (e.g., global warming)

Most of these arguments involve qualitative claims (more/less, inadequate/excessive) about quantities.

Some of these arguments involve actual numbers (deaths attributable to second-hand smoke) or arithmetic comparisons of actual numbers.

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Civic Engagement: Numbers in the News

Percentage of news stories involving numbers that involve the following items:

- 68%: assembly (social construction)
- 60%: association as evidence for causation
- 68%: ratio grammar (rates or percentages)
- 45%: design (experiment, study, survey)
- 11%: “significant” [1% “statistically significant”]
- 9%: margin of error

Source: www.StatLit.org/pdf/2007SchieldASA.pdf

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Critical Thinking Assembly

Assembly is choice in defining what and how to count or measure, and in presenting results.

In “Damned Lies and Statistics,” Dr. Joel Best notes “All statistics are socially constructed.”

68% of quantitative news articles involve assembly:

- Adjectives: affordable, excessive, dangerous.
- Nouns: unhealthy, rich, dysfunctional

Questions: “Do you support *preferential treatment*?” versus “Do you support affirmative action?”

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Critical Thinking From Association to Causation

60% of news stories with numbers use associations as evidence for causal connections. Consider these titles:

- Teacher’s gender **affects** learning
- Smoking can **lessen** IQ, thinking ability
- Unfair boss may **shorten** your life
- Weightlifting may **cut** teen diabetes’s risk.
- Older dads may **have** kids with autism.
- Smoker’s kids **have** more attention deficit.
- Second-hand smoke **boosts** Alzheimer’s risk

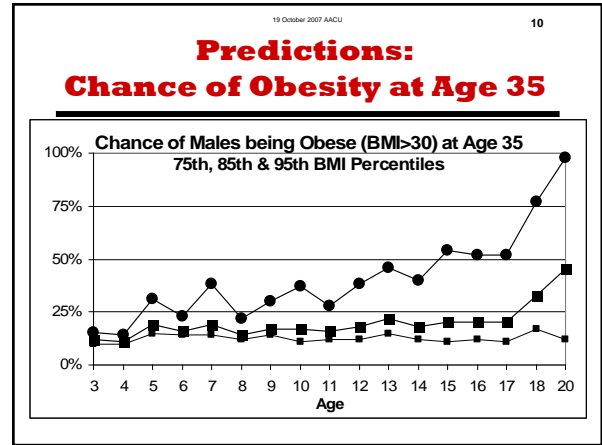
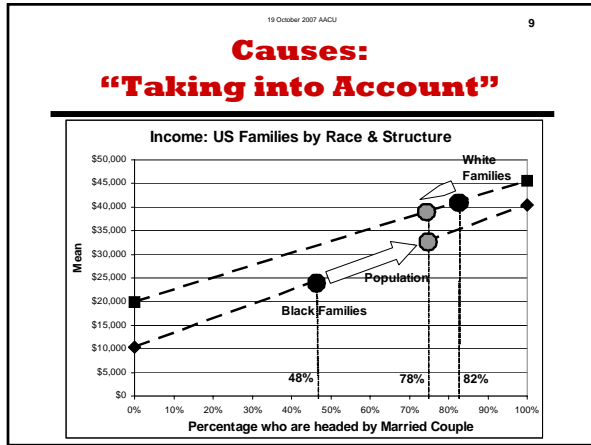
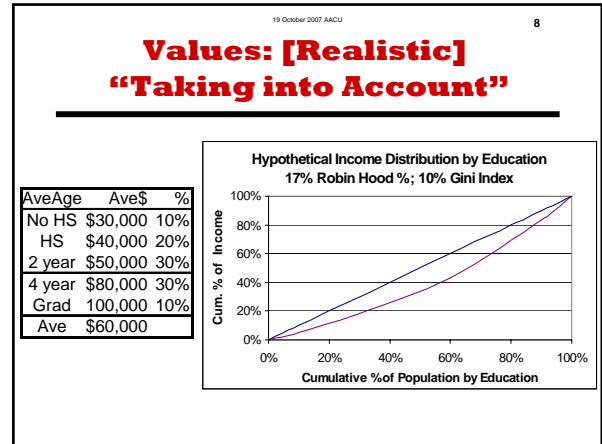
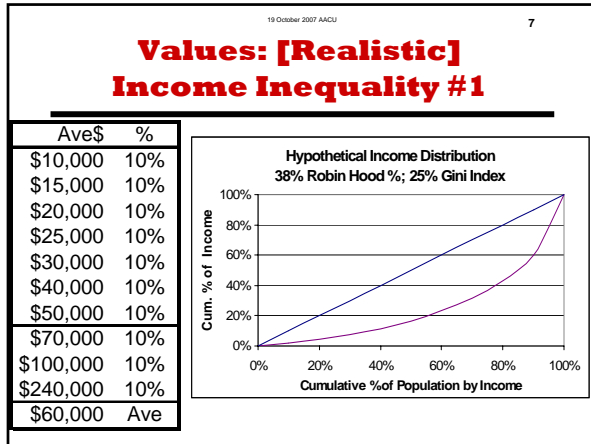
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Thesis

Students **cannot** fully engage
in college-level critical thinking
when taking civic-engagement courses

UNLESS

they can effectively analyze
quantitative arguments:
arguments that involve numbers.



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Critical Thinking Read and Analyze Data

Top age groups for DUI

| | |
|-------|-----|
| 21-25 | 29% |
| 26-29 | 24% |
| 18-20 | 20% |
| 30-34 | 19% |

Guests who bring gifts (by household income)

| | |
|-------------------|-----|
| \$33,000 or less | 15% |
| \$35,001-\$50,000 | 18% |
| \$50,001-\$75,000 | 24% |
| Over \$75,001 | 41% |

1) 20% of 21-25s have DUIs. 15% of poor bring gifts
 2) 20% of DUIs are 21-25 15% of gift bringers are poor
 For more, see *Percentage graphs in USA Today Online*.
 Copy at www.StatLit.org/pdf/2005SchieldASA.pdf

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Conclusion

Students need repeated exposure to analytical reasoning about arguments in the news.

Ideally, this would be taught as a GenEd course and reinforced in disciplines across the curriculum – like writing.

Study the design of Augsburg’s statistical literacy course at www.StatLit.org/Design.htm

See also *Statistical Literacy and Liberal Education at Augsburg College in AACU Peer Review*, Fall 2005
www.StatLit.org/pdf/2004SchieldAACU.pdf