

Civic Engagement: Numbers in the News

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

Civic Engagement Programs

Analytical Reasoning

All civic engagement programs 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 numbers (e.g., whites are more likely to commit suicide than blacks).

Some of these arguments involve actual numbers (e.g., 240,000 deaths are attributable to second-hand smoke) or arithmetic comparisons of numbers.

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

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?”

Critical Thinking

Association for Causation

60% of news stories with numbers use association as a basis for causation. 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

THESIS

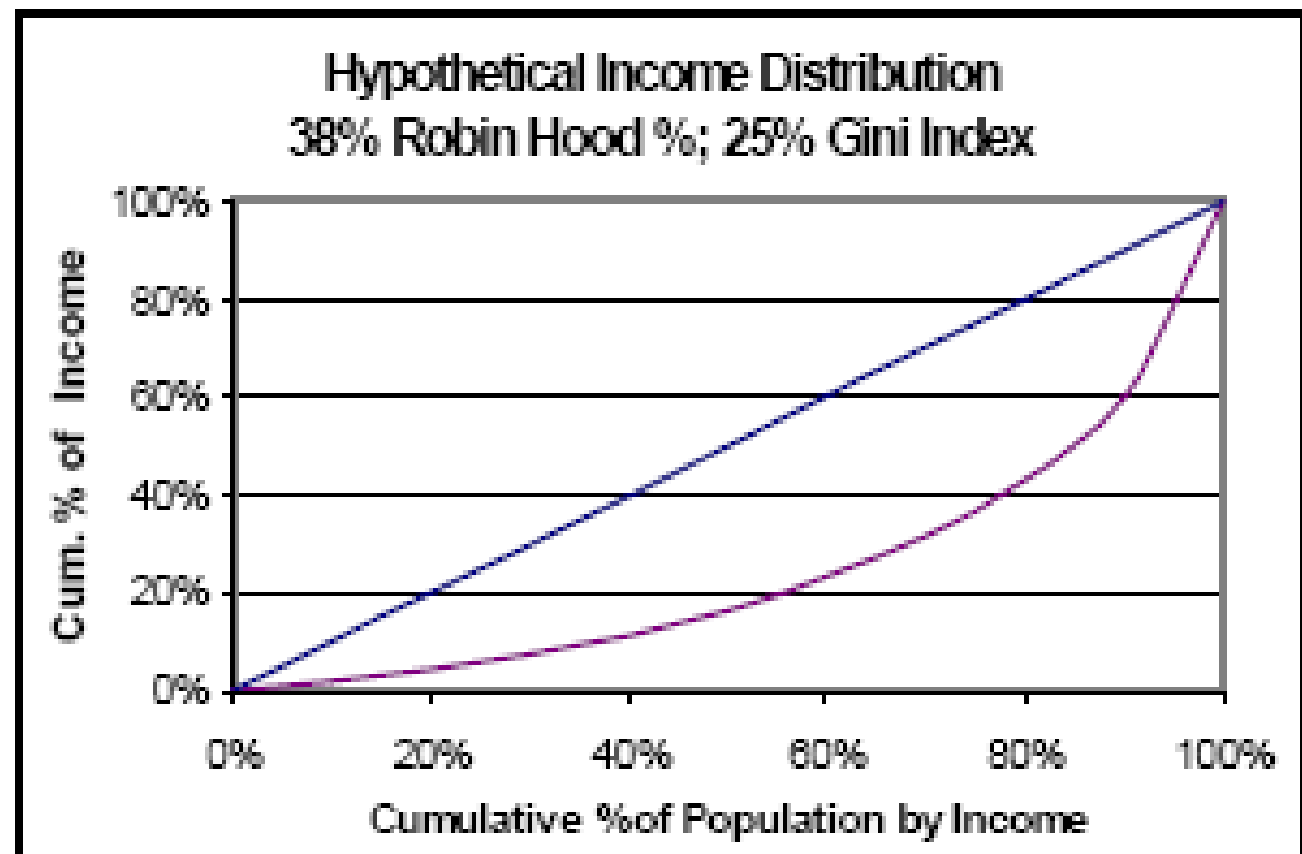
Students cannot fully engage
in college-level critical thinking
when taking civic-engagement courses

UNLESS

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

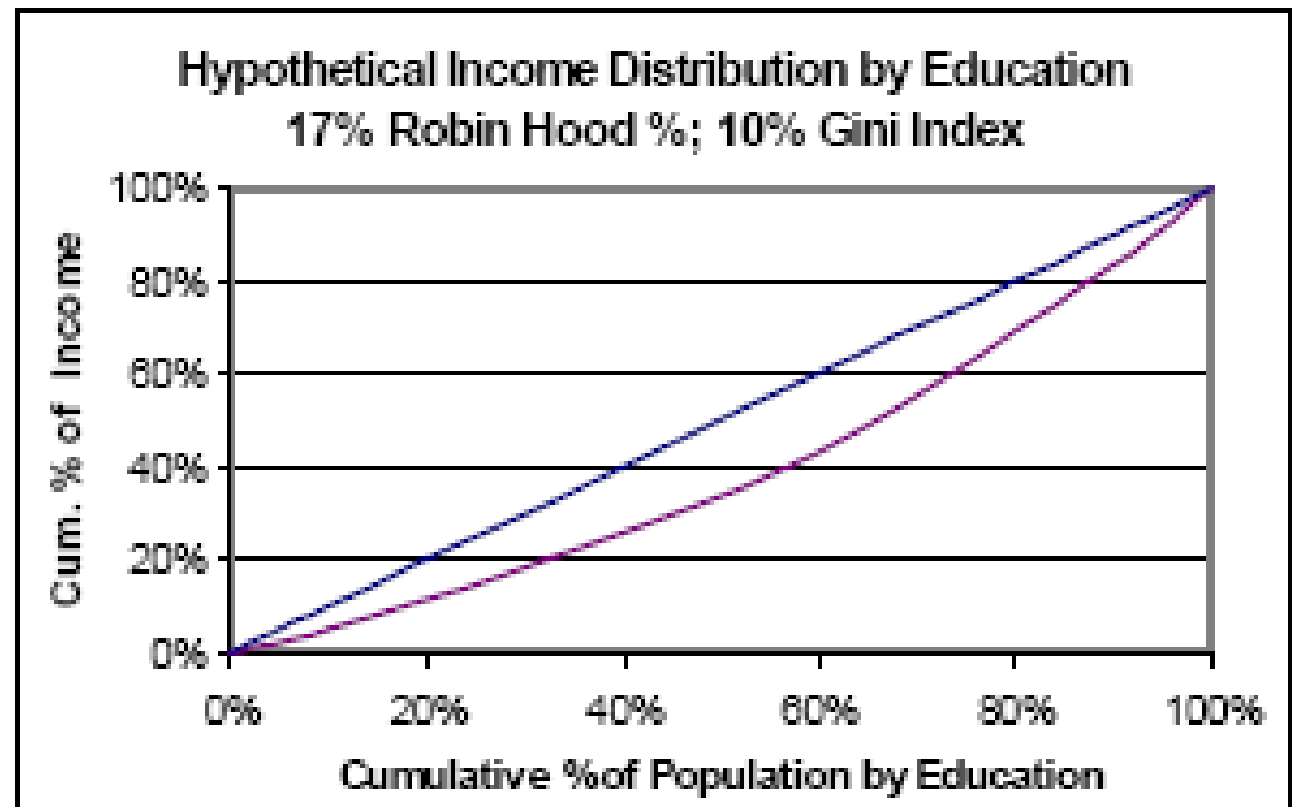
Values: Income Inequality #1

Ave\$	%
\$10,000	10%
\$15,000	10%
\$20,000	10%
\$25,000	10%
\$30,000	10%
\$40,000	10%
\$50,000	10%
\$70,000	10%
\$100,000	10%
\$240,000	10%
\$60,000	Ave

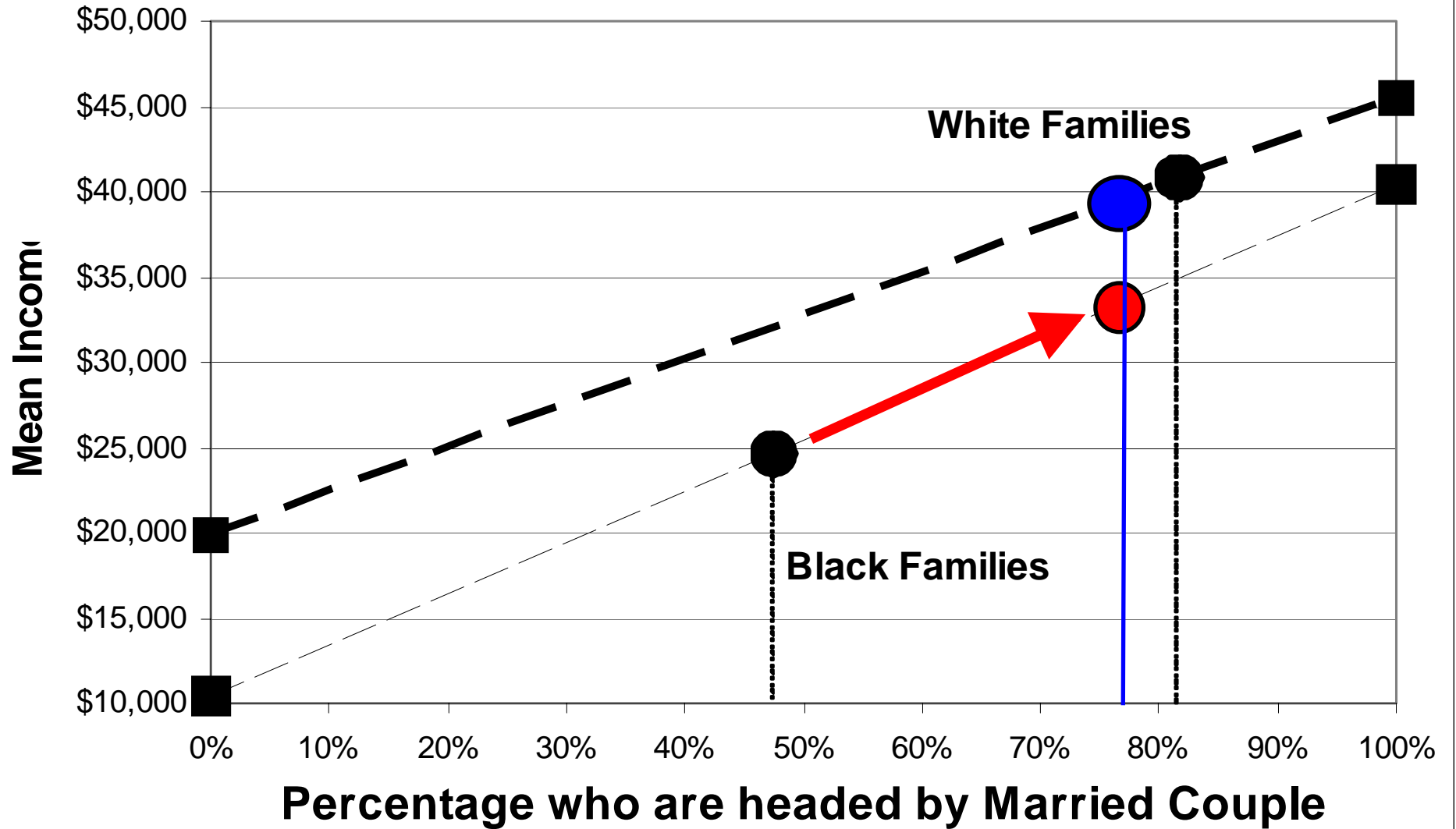


Values: “Taking into Account”

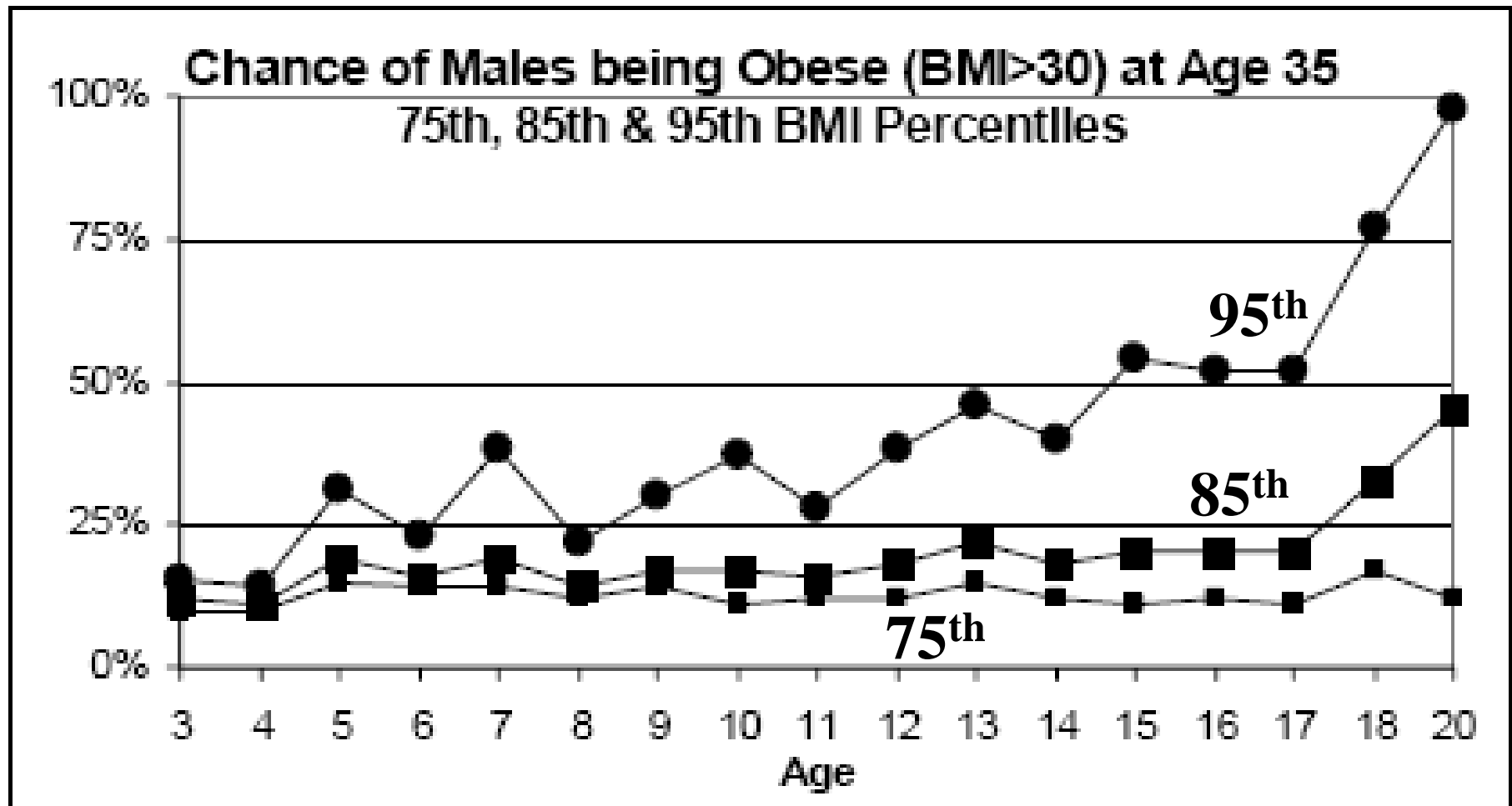
AveAge	Ave\$	%
No HS	\$30,000	10%
HS	\$40,000	20%
2 year	\$50,000	30%
4 year	\$80,000	30%
Grad	100,000	10%
Ave	\$60,000	



Income: US Families by Race & Structure



Predictions: Chance of Obesity at Age 35



Critical Thinking

Read and Analyze Data



By Cristina Abella and Chad Palmer, USA TODAY
Source: U.S. Dept. of Health & Human Services



By Anne R. Carey and Gia Kereszites, USA TODAY
Source: Opinion Research for Lexus

- 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

Conclusion

Students need repeated exposure to analytical reasoning about issues and 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*, Fall 2005 AACU Peer Review.

www.StatLit.org/pdf/2004SchieldAACU.pdf