

7/23/2001 A1 Statistical Literacy **Statistical Literacy** PKAL

What's Happening?


How does it Relate To
Quantitative Literacy?

Project Kaleidoscope 2001 Summer Conference
Milo Schield, Augsburg College
www.augsburg.edu/ppages/~schield

7/23/2001 A2 Statistical Literacy **Statistical Literacy For All College Graduates** PKAL


Milo Schield
Augsburg College

“Statistical Literacy is critical thinking about arguments that use statistics as evidence”



7/23/2001 A3 Statistical Literacy **Statistical Literacy for Business Majors** PKAL

“Business majors must be able to read and interpret data !”




John Cerrito, Chair,
Department of Business Administration
Augsburg College

7/23/2001 A4 Statistical Literacy **Statistical Literacy Dr. David Kelley, Philosopher** PKAL

Author of “The Art of Reasoning”

“There are few tasks in education today as urgent as improving the quality of statistical literacy.”



Featured in an ABC John Stossel video

7/23/2001 A5 Statistical Literacy **Statistical Literacy Lynn Steen, Mathematician** PKAL

“.. for the majority [of students] who will use their statistical knowledge primarily as citizens, homemakers, and parents, the values of statistical literacy as expressed in your proposal are of unquestionable importance.”

Lynn Steen, Past President of the American Mathematical Association

7/23/2001 A6 Statistical Literacy **Keck invests \$500,000 in Statistic Literacy** PKAL

William M. Keck founded *Superior Oil*. He placed a premium on *imagination, innovation, and new technology*.

The W. M. Keck Foundation is “committed to using *imagination and innovation* in its’ grant giving.”

The Foundation supports projects “that set *new directions* and use *creative approaches* in education.”

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Statistical Literacy PKAL

Statistical Literacy: Statistics and Mathematics

Literacy is the knowledge needed to function generally and effectively in a society.

Statistical literacy is not about statistics: chance, sampling distributions, etc.

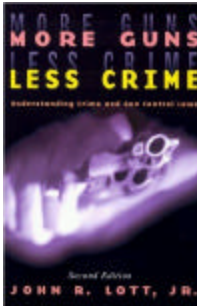
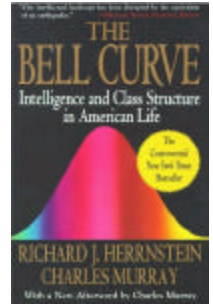
Statistical literacy is not about mathematics: algebra, calculus, operations research, etc.

Statistical literacy is about arguments: arguments that use numbers as evidence.

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Statistical Literacy PKAL

Statistical Literacy: An Intellectual Necessity

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Statistical Literacy PKAL

Statistical Literacy GOALS

For college students to be *statistically numerate* -- to think critically about *statistical arguments*

- Distinguish *association* from *causation*.
- Distinguish *confounding* from *chance*.
- Distinguish *spurious (superficial)* from *real*.
- Evaluate the *strength* of an *argument*.
- Make better *decisions*.

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Statistical Literacy PKAL

Statistical Literacy TOPICS

Read tables and graphs, rates and percentages.

Distinguish: association from causation.
 explanation from prediction.
 longitudinal from cross-sectional.

Understand: Simpson's Paradox & confounding modeling and correlation.

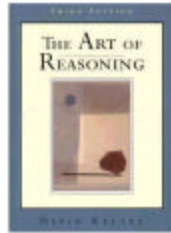
Distinguish: confidence from probability.
 : "unlikely if due to chance from
 "unlikely to be due to chance."

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Statistical Literacy PKAL

Statistical Literacy: Related Books


Critical Thinking



Applied Statistics



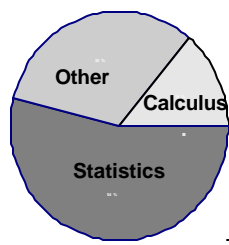
Epidemiology



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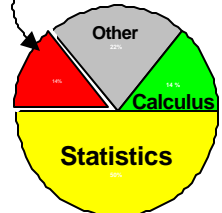
Statistical Literacy PKAL

Statistical Literacy Goal (% of College Graduates)



Today: 2001

Statistical Literacy



Goal: 14% by 2014