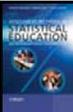2011   1

Statistical Literacy Worldwide 2010

MILO SCHIELD,
Augsburg College

Director, W. M. Keck Statistical Literacy Project
Vice President, National Numeracy Network
US Rep: International Statistical Literacy Project

January 2011

Slides at www.StatLit.org/pdf/2011SchieldMAAStatEd6up.pdf

2011   2

Assessing
Statistical Literacy

- *Assessing Statistical Literacy* by Flavia Jolliffe

- *Assessing important learning outcomes in introductory tertiary statistics courses* by Joan Garfield, Robert delMas and Andrew Zieffler.

- *Assessing students' statistical literacy* by Stephanie Budgett and Maxine Pfannkuch.

- *Assessing Statistical Literacy: Take CARE* by Milo Schield

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2011

Using Media Reports to
Promote Statistical Literacy

Using media reports to promote statistical literacy for non-quantitative majors by Stephanie Budgett (left) and Maxine Pfannkuch (right). NZ

- Among the 6 students interviewed seven months after the course, they found no meaningful difference between the quantitative and non-quantitative students.

- There does however appear to be a difference in the way the two groups explain their understanding."

2011

Reading
Tables & Graphs

Using a Five Step Framework for interpreting tables and graphs in their contexts: Marian Kemp and Barry Kissane (Australia)

Step 1: Get started.

Step 2: What do they mean?

Step 3: How do they vary [within a series]?

Step 4: Where are the differences [between two series]?

Step 5: Why do they differ?

2011

Thinking Critically
About Data

How we can all learn to think critically about data: Ian Gordon, Sue Finch (Australia).

- We considered "a problem-based approach ..., but opted for a topic-based approach."

- Students had "to make a detailed review of a single research study" and compare it with the reporting ... in the news item and in the published article."

2011

Multivariate
Statistics

Luring non-quantitative majors into advanced statistical reasoning (and luring statistics educators into real statistics): Sean McCusker (shown), Jim Ridgway, James Nicholson (UK)

Goal: "to extend students' activity beyond simple descriptive and inferential statistics which often relate to just two variables, to key [multivariate] statistical ideas such as effect size and interaction.

2011
Statistical Il-literacy in the News
ICOTS 8

Association-Causation Problems in News Stories by Milo Schield.

This paper investigates inaccuracies, omissions and ambiguities in number-based news stories.

Reviews *times-more* and *times-less* comparisons, confusion between association and causation and confusing *frequently* with *likely*.

www.StatLit.org/pdf/2010SchieldICOTS.pdf

2011
Improving Statistical Literacy
ICOTS 8

Improving Statistical Literacy by National and International Cooperation by Reija Helenius (Finland)

"The promotion of statistical literacy and awareness represent a strategic goal of each statistical office.

A set of statistics does not become endowed with a meaning until it finds its user and is capable of adding value to the activity of the user of the information."

2011
Don't Blame Journalists
ICOTS 8

Unintentional Lies in the Media: Don't Blame Journalists for What We Don't Teach. Jessica Utts.

As statistics educators, we need to do a better job of educating our students

- to write these stories (as future journalists),
- to interpret them for decision-making (as future ... professionals) and
- to read them with a critical eye (as future consumers of information).

2011   **10**
Conclusion

Statistical Literacy is
- Advancing in the US
- Moving ahead worldwide

World wide centers:
- Multivariate thinking: UK
- Reading statistics in the media: NZ
- Reading tables: AU (Tasmania and NSW)
- Reading graphs: AU
- Using/Interpreting confidence intervals: AU