Truth-Telling and Survey Methods in Advocacy Research: A Call for the Formation of the Flat Venus Society in Library Assessment

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“This image was captured by the Magellan spacecraft... The orange tint approximates the color the human eye would see as a result of sunlight filtering through Venus's cloud cover.”

This is a call for the formation of the Flat Venus Society. In the face of a media blitz that conveys the impression that Venus is characterized by soaring mountains and deep canyons, a dedicated group is needed to promote the fact that our sister planet is mostly flat, rolling plains… Yet the public thinks [Venus's volcanoes] are precipitous peaks with near-vertical walls rising into a black sky. (A black sky? On Venus?)

Exemplary Research Critique
by Kaplan (2008)

Reading at Risk, National Endowment for the Arts 2004 report: Reading skills declining among American students

Used national data from 1984 forward, showing only the declining half of a larger trend

Data from 1971 on indicates no decrease in reading proficiency for these students
Average Reading Proficiency Scores for 17-Year-Olds 1971 to 2004
Adapted from Kaplan (2008)
Data source: US National Center for Educational Statistics

Arrows indicate National Assessment of Educational Progress results.
Formal Research Subscribes to a Higher Standard of Evidence

Considers the complete range of data objectively

Data contradicting theories are disclosed i.e. refutation in scientific research

Seeks to make the strongest argument possible given the investigative data
Formal Research Subscribes to a Higher Standard of Evidence

Discloses limitations to study scope and methods and implications for interpreting study findings

For advocacy research, impartiality and fairness important for a credible message
Examples of Exaggerated Claims in Library Advocacy
Claims from Becker et al. (2010)

“As seen in Figure 2, from 1998 to 2006 the average number of public access computer terminals in public libraries grew by more than 300 percent.” p. 17

“Internet provision [by libraries] has skyrocketed...” p. 18
Figure 2 from Becker et al., *Opportunity for All*, p. 18.
Cumulative Percent Change in the Number of Public Access Computers in U.S. Public Libraries

Data source: Institute of Museum and Library Services
Examples of Exaggerated Claims in Library Advocacy

Source: www.geekthelibrary.org
Geekthelibrary.org’s “correct” answer.

(Arrow is my annotation.)
Supporting argument for the claim that job-seeking is the most frequent computer use.

(Ellipse is my annotation.)
The data:

Anecdotal reports of library attendance.

In 2009 66% of librarians believed job-seeking computer use is important. In 2010, this figure increased to 74% (Davis et al., 2009, 2010)

Neither of these are measures of actual use of computers in US public libraries

Geekthelibrary.org’s claim is pure conjecture
Examples of Exaggerated Claims in Library Advocacy

How libraries stack up: 2010

- Every day, 300,000 Americans get job-seeking help at their public library.

Hot spots:
- 12,000: Most public libraries provide free Internet access for job-seekers.
- 1,300: Internet usage has more than tripled since 1999.
- 700: Internet access is free.

Taking care of business:
- 2.8 million: Most public libraries provide free computer access.
- 5,400: Businesses offering online training classes.

It’s in our wallets:
- 15.5 million: Library cards are used as pre-paid or master cards.
- 8.2 million: Library cards are used for library-related purchases.

Getting technical:
- 4,000: Businesses offering computer training classes.

Here are a few of the ways that our public libraries stack up:
Career assistance when we need it most

U.S. public libraries offering career assistance: 13,000

U.S. Department of Labor One-stop Career Centers: 3,000

Problems with OCLC’s ‘Help Wanted’ comparison:

Number of services outlets are poor indicators of the numbers of services delivered

Comparison ignores types and mix of services
Over 70%
Elected and appointed officials feel that the library has sufficient funding. Learn more

While elected officials are more likely than the voting public to recognize the financial struggles the library faces, the majority (73%) think the library has enough money for day-to-day operations.

Source: From Awareness to Funding: A study of library support in America

Source: www.geekthelibrary.org
Survey sample: 84 self-selected respondents

De Rosa & Johnson (2008) admitted sample was “a convenience sample that is quantitative but not statistically representative of all local elected officials in the United States.”  p. 23.

Sample unrepresentative and inaccurate

Usable for drawing conclusions about U.S. elected officials as a whole
Examples of Exaggerated Claims in Library Advocacy
Study’s main question:

Do public library summer reading programs impact student achievement?

Researchers’ answer:

“Yes, we can state that in this study they do in positive ways.” (Roman et al. (2010), p. 51)

Soundness of study findings:

Poor. Research design insufficient for drawing conclusions about causality (impact).
Misleading statements in the Dominican Study:

“Students who participated in the public library summer reading program scored higher on reading achievement tests at the beginning of the next school year than those students who did not participate.

While [non-participating] students also [had] improved reading scores, they did not reach the reading level of the students who did participate. [in summer reading].”
Participating students superior readers before and after summer programs (i.e., non-equivalent control group)

Inadequate baseline for comparing effects of summer reading programs

Performance improvements not attributable to summer programs due to inadequate research design
Examples of Mistaken Understanding of Statistical Methods
OCLC Study of Perceptions of Catalog Users (Calhoun, [2009])

Well-planned, comprehensive study

Uses data to inform decisions!

Random sampling used for one subset of respondents

Misunderstood statistical significance testing
Top Ten Data Quality Enhancements

Which of the following enhancements would you recommend?

Base: Public library respondents

- Merge duplicate records: 48%
- Add cover art to results: 35%
- Fix typos: 29%
- Upgrade brief records: 29%
- Add tables of contents to records: 27%
- Add summaries to records: 27%
- Add summaries to results: 27%
- Increase accuracy of library holding information: 25%
- Fix MARC coding errors: 25%
- Add more formats: 25%

Source: Online Catalogs: What Users and Librarians Want, OCLC, 2009 (Library survey)
Close-up of portion of chart from previous slide (Calhoun, (2009), p. 28)

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Significantly more public library respondents than academic and special library respondents

Significantly more public and academic library respondents than special library respondents

Source: Online Catalogs: What Users and Librarians Want, OCLC, 2009 (Library survey)
Statistical significance determines *whether* observed difference is likely to be authentic rather than due to random error (chance)

Statistical significance sheds no light on meaning of magnitude of difference

Meaning (non-statistical “significance”) of difference magnitude comes from subject knowledge and professional judgment
Examples of Mistaken Understanding of Statistical Methods

Nonprobability sampling used annually (self-selected respondents)

2009 study reports margins of error, estimates of survey precision

Margins of error calculations valid only with probability sampling
Cost/Benefit Analysis & Return-on-Investment

Misunderstanding of the theory behind these techniques:

Cost/benefit results not necessarily comparable across libraries or institutions (Elliott et al., 2007)

Subjects libraries to purely economic comparisons with other public services
Due to positive cost/benefit findings, in one community “...library staff was asked to share management practices with local school systems and fire districts and to impart the secrets of its efficiency in managing money.” Imholz and Arns (2007), p. 20.
Cost/Benefit Analysis & Return-on-Investment

Measures of “economic efficiency” only!

By no means do these approaches measure effectiveness, operating efficiency, quality, or managerial aptitude.
“Library Value Calculators”

Biased and misleading

Library-wide calculators produce exaggerated results since they ignore relevant costs

Individual patron calculators are deceptive since they ignore students and households subsidizing patron benefits
“Library Value Calculators”

Calculators withhold information from constituents; libraries should not participate in this deception.

Evaluation and assessment concerned with communities of users, not how individuals fare.

Value calculators are marketing gimmicks, not measurement instruments.
Need for a Flat Venus Society in Library Assessment

Inaccurate and exaggerated advocacy claims impede profession’s search for reliable, useful advocacy information.

Professional reputation suffers when constituents discover misleading, disingenuous information.
Next Steps for The Society

Set higher expectations for accuracy of advocacy information

Consider existing standards in evaluation and survey research
Next Steps for The Society

Do not permit marketeers* to define advocacy campaign content

Work to improve understanding of quantitative and survey research methods by library professionals

* “Marketeers” are marketing and advertising professionals who have insufficient regard for the soundness and accuracy of the information they present.

“Evaluation conclusions and [study design] decisions should be explicitly justified in the cultures and contexts where they have consequences.

Evaluation procedures should yield sufficiently dependable and consistent information for the intended uses.

Evaluations should employ technically adequate designs and analyses that are appropriate for the evaluation purposes.”
Relevant Standards: Joint Committee for Standards in Educational Evaluation (2010)

“Evaluation reasoning leading from information and analyses to findings, interpretations, conclusions, and judgments should be clearly and completely documented.

Evaluation communications should have adequate scope and guard against misconceptions, biases, distortions, and errors.”
Relevant Standards: *Principles of Disclosure, National Council on Public Polls*

Sampling method employed

Population sampled

Size of the sample

Margin of sampling error (if a probability sample)
Relevant Standards: *Principles of Disclosure, National Council on Public Polls*

Survey mode (e.g. telephone/interviewer, telephone/automated, mail, internet, etc.)

Complete wording and ordering of questions mentioned upon which the results are based

Percentage of responses for all questions reported
References*


* For slide presentation only; complete reference appear in the paper.