



# Teaching Students to Evaluate Sources: Getting Back to Basics



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# Source Evaluation Methods

How do students determine credibility and relevance?

# CRAAP vs. 6 Question Words

## Evaluating Information

### CRAAP Test

Use the CRAAP test to guide you through evaluating whether information sources are authoritative (to be trusted as being accurate and reliable) for your needs.

**IMPORTANT** A source is never only "good" or "bad" but can be more or less appropriate depending on the research you are doing.

**EXAMPLE** Your friend runs out of the basement yelling "it's flooding!" and is an authoritative source on if the basement is flooding. However, your friend has never read Jane Eyre and gives you his opinion about the book, is not an authoritative source on Jane Eyre.



#### Currency

**EXPLANATION** The timeliness of the information.

##### QUESTIONS

- When was the information published or posted?
- Has the information been revised or updated?
- Does your topic require current information, or will older sources work as well?
- Are the links functional?



#### Relevance

**EXPLANATION** The importance of the information for your needs.

##### QUESTIONS

- Does the information relate to your topic or answer your question?
- Who is the intended audience?
- Is the information at an appropriate level (i.e. not too elementary or advanced for your needs)?
- Have you looked at a variety of sources before determining this is one you will use?
- Would you be comfortable citing this source in your research paper?



#### Authority

**EXPLANATION** The source of the information.

##### QUESTIONS

- Who is the author/publisher/source/sponsor?
- What are the author's credentials or organizational affiliations?
- Is the author qualified to write on the topic?
- Is there contact information, such as a publisher or email address?
- Does the URL reveal anything about the author or source? examples: .com .edu .gov .org .net



#### Accuracy

**EXPLANATION** The reliability, truthfulness and correctness of the content.

##### QUESTIONS

- Where does the information come from?
- Is the information supported by evidence?
- Has the information been reviewed or refereed?
- Can you verify any of the information in another source or from personal knowledge?
- Does the language or tone seem unbiased and free of emotion?
- Are there spelling, grammar or typographical errors?



#### Purpose

**EXPLANATION** The reason the information exists.

##### QUESTIONS

- What is the purpose of the information? Is it to inform, teach, sell, entertain or persuade?
- Do the author/sponsors make their intentions or purpose clear?
- Is the information fact, opinion or propaganda?
- Does the point of view appear objective and impartial?
- Are there political, ideological, cultural, religious, institutional or personal biases?

Adapted from: Evaluating Information - Applying the CRAAP Test Meriam Library California State University, Chico, [https://www.ccsu.edu/lib/information/eval\\_webpages.pdf](https://www.ccsu.edu/lib/information/eval_webpages.pdf)

## Evaluating Information

### 6 Question Words

Use the following 6 journalistic question words to guide you through evaluating whether information sources are authoritative (to be trusted as being accurate and reliable) for your needs.

**IMPORTANT** A source is never only "good" or "bad" but can be more or less appropriate depending on the research you are doing.

**EXAMPLE** Your friend runs out of the basement yelling "it's flooding!" and is an authoritative source on if the basement is flooding. However, your friend has never read Jane Eyre and gives you his opinion about the book, is not an authoritative source on Jane Eyre.



#### Author

**EXPLANATION** Authority exists in many forms such as subject expertise (a professor), societal position (a member of Congress), or special experience (a participant at an event). What are the author's qualifications? What credentials contribute to the author's authority? Many disciplines have acknowledged authorities (e.g., well-known scholars) that are considered "standards" in the field. But even these "standards" can be and have been challenged.

**EXAMPLE** A blog posting by an eye-witness to a riot would be an authoritative primary source on the subject. That same blog posting would not be an authoritative secondary source.



#### Type of Document & Overall Tone

**EXPLANATION** Authoritative content may be any type of media (books, articles, videos, social media, etc.) and come in many different tones (conversational, academic, technical). Authoritative sources are appropriate to the research being done.

**EXAMPLE** Research on Malcolm X would be enhanced by an informal conversation with one of his friends, not by the study of technical reports. Research on structural engineering, however, would be enhanced by the study of technical reports.



#### Source of Information (Where it Appears)

**EXPLANATION** Authoritative content may be in formal (such as a scholarly article) or informal (a blog posting) sources. Many disciplines have acknowledged authorities (publications like scholarly journals or books) that are considered "standards" in the field. Similarly, there are publishing houses, academic presses, or even certain restricted website domains (e.g., .gov or .edu) that have reputations for providing high-quality information. But even these "standards" can be and have been challenged. It is important to evaluate not only the work but also where you found it.

**EXAMPLE** Authoritative research on fracking produced by the federal government but then re-posted by a tracking company website, may be authoritative, but should be carefully analyzed in the context of the site on which it was found.



#### Publication Date & Occurrence that Precipitated Publication

**EXPLANATION** Authoritative information may be recently published or very old. Subject and context are all important when asking "when."

**EXAMPLE** Referring to a book published in 1900 for research on the U.S. Civil War (1861-1865) could be very authoritative. Researching stem cell transplantation using a journal article published in 2010 could be out-of-date.



#### Author's Purpose for Writing the Document

**EXPLANATION** Bias can exist in any source (newspapers, scholarly articles, blog posts, etc.). When evaluating a source, asking why they wrote the document (and if the work was funded or sponsored, by whom) can help you decide if it is authoritative. Having a bias doesn't mean a source shouldn't be used, rather any information should be examined critically and verified with another source.

**EXAMPLE** Research explaining the benefits of smoking funded by a tobacco company very likely has a bias but could still contain authoritative information if verified by other sources.



#### Author's Method of Gathering & Analyzing Data

**EXPLANATION** There are many different ways to gather & analyze information. When gathering data an author may have done their own original study, consulted various outside sources, interviewed people, or be relying on personal experience. Any method can be authoritative, depending on the information needed. When analyzing data, the author's use of proprietary, inter-operable the editor to which systems can exchange, interpret, and share data, or open data formats signals how and if an author intends the data to be used and shared.

**EXAMPLE** Using interviews to support the effectiveness of a new drug is not a sound methodology, however, using interviews to give context to a riot is.

Method adapted from Rachel Radwin and Rachel W. Gammons, "Teaching Information Evaluation with the Five Ws: An Elementary Method, an Institutional Shift, and the Effect on Student Reading and Application," *Reference & User Services Quarterly* 55, 4 (2014): 334-47.





## Research Question:

Would the six question words (6QW) allow for schema creation (Gerjets, Scheiter, & Cierniak, 2009) by linking something known (six question words) to new information (critically evaluating sources) more effectively than a mnemonic device (CRAAP) leading to “better” source evaluation?

# Study Methodology



## Business First Year Seminar

- Required course
- Incoming freshmen
- Approximately 25 students per section

## AB study design

- Two sections taught 6 question words
- Two sections taught CRAAP

# Study Methodology



Research paper source evaluation

Pre-, post-, and end-of semester tests

- Source evaluation understanding
- Library instruction experience



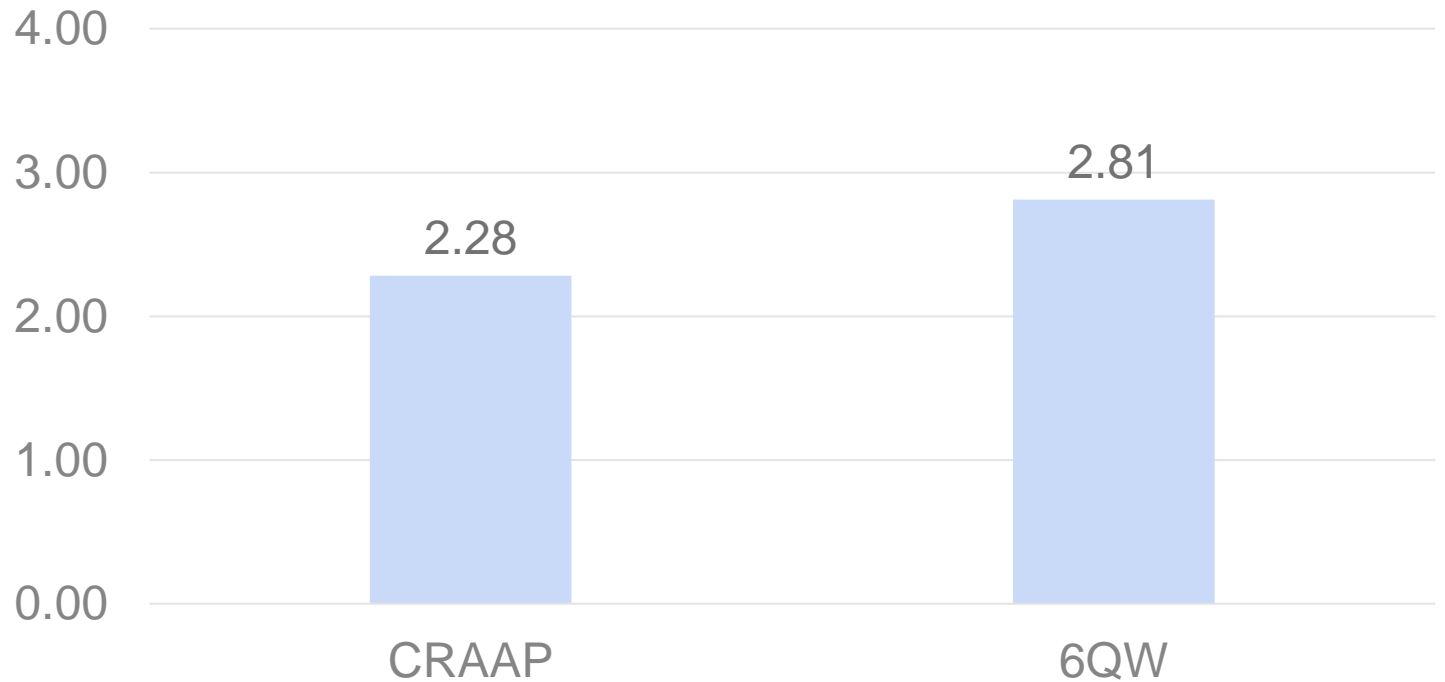
# Results

Is there a better method?

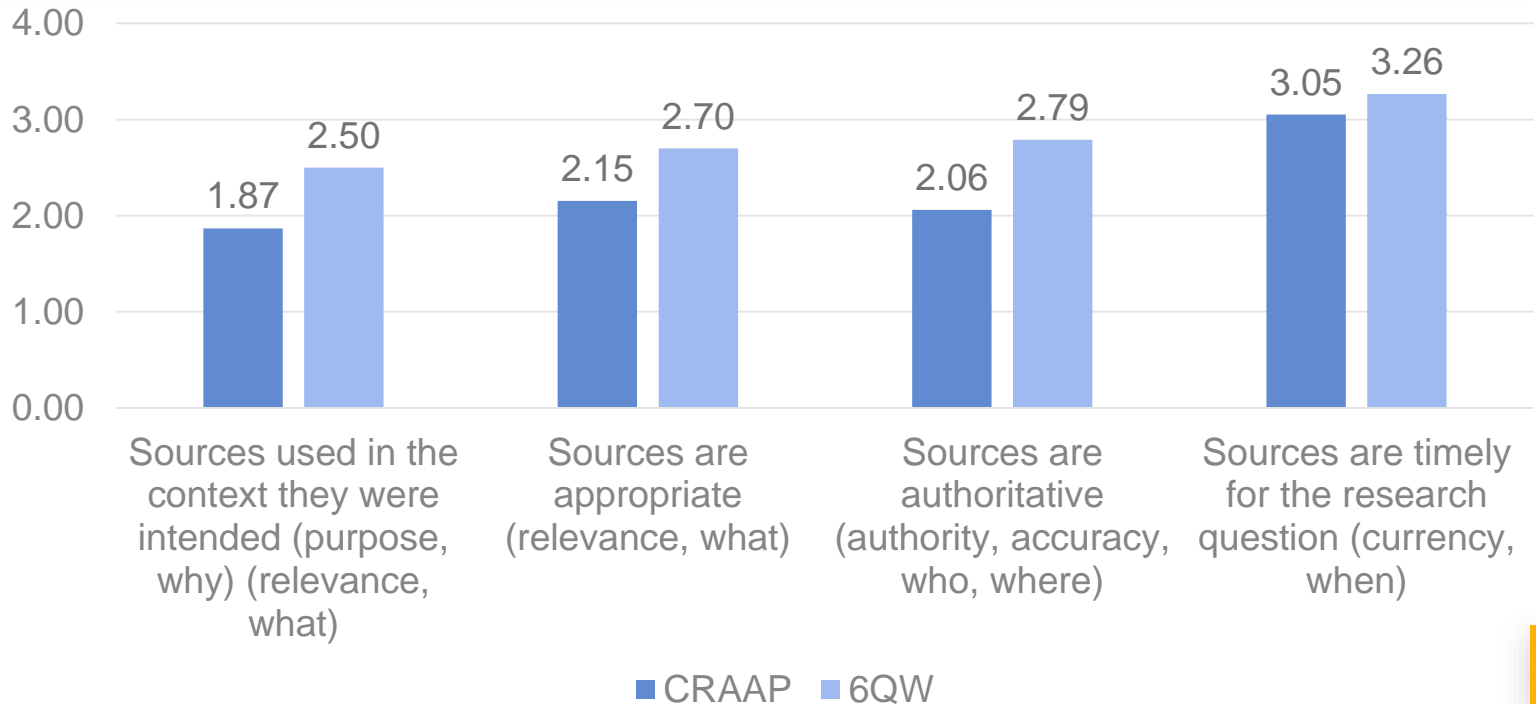
# Rubric

	Highly Developed (4)	Developed (3)	Emerging (2)	Initial (1)
Sources used in the context they were intended (purpose, why) (relevance, what)	Always distinguishes between types of sources (e.g., scholarly v. popular, fact v. opinion)	Usually distinguishes between types of sources (e.g., scholarly v. popular, fact v. opinion)	Does not consistently distinguish between types of sources (e.g., primary v. secondary, scholarly v. popular, fact v. opinion)	No distinction between types of sources (e.g., scholarly v. popular, fact v. opinion)
Sources are appropriate (relevance, what)	Does not over- or under-rely on the ideas of others or the work of a single author. Sources are always used in a way that provides evidence toward the argument.	May over- or under-rely on the ideas of others or the work of a single author. Most sources are used in a way that provides evidence for the argument.	Relies on too few or largely inappropriate sources	When included, sources are too few or badly inappropriate
Sources are authoritative (authority, accuracy, who, where)	Uses a variety of authoritative sources	Sources are used support claim(s) but may not be the most authoritative source to make claim	Many unsupported claims and clearly selected sources out of convenience	Does not explore outside sources or present evidence when called for
Sources are timely for the research question (currency, when)	Student utilizes current sources and/or data on the issue	Most information used is current, however some may be outdated	Most information used is outdated with no discussion of relevance in the paper	The student does not appear to have considered currency in selecting sources and/or data

# Authentic Assessment – Total Average Rubric Scores



# Authentic Assessment – Rubric Scores by Area



# Pre, Post, and End of Semester Tests



## Pre-Test

Scholarly source published in 1984 on drug addiction.

### ***Inappropriate***

because too dated for a paper to be written on current issues in drug addiction

## Post-Test

Web-based reference article on privacy published in 2013.

### ***Mostly inappropriate***

except when noted to be used for definition purposes.

## End-of-Semester Test

Scholarly source on the business ethics of privatized prisons published in 2017.

***Appropriate*** because recent for writing about current issues in the prison system

# Would you use this source?



Percentage of Respondents (shaded cell = best answer)		
<b>CRAAP</b>	<b>Y</b>	<b>N</b>
Pre-Quiz (n = 31)	58%	42%
Post-Quiz (n = 21)	24%	76%
EOS-Quiz (n = 19)	100%	0%
<b>6QW</b>	<b>Y</b>	<b>N</b>
Pre-Quiz (n = 40)	55%	45%
Post-Quiz (n = 52)	58%	42%
EOS Quiz (n = 29)	100%	0%
<b>ALL</b>	<b>Y</b>	<b>N</b>
Pre-Quiz (n = 71)	56%	44%
Post-Quiz (n = 73)	48%	52%
EOS-Quiz (n = 48)	100%	0%

# Was evaluation criteria appropriate?



Would use the article	CRAAP			6QW			Either		
	Yes	No	All	Yes	No	All	Yes	No	All
Pre-Quiz	2.13	3.50	2.77	2.16	3.57	2.90	2.14	3.54	2.84
Post-Quiz	1.75	1.75	2.04	2.04	2.20	1.97	2.09	1.75	2.00
EOS Quiz	3.06	NA	3.07	3.10	NA	3.07	3.09	NA	3.07

T-Test showed no significant change in evaluation score between methods.

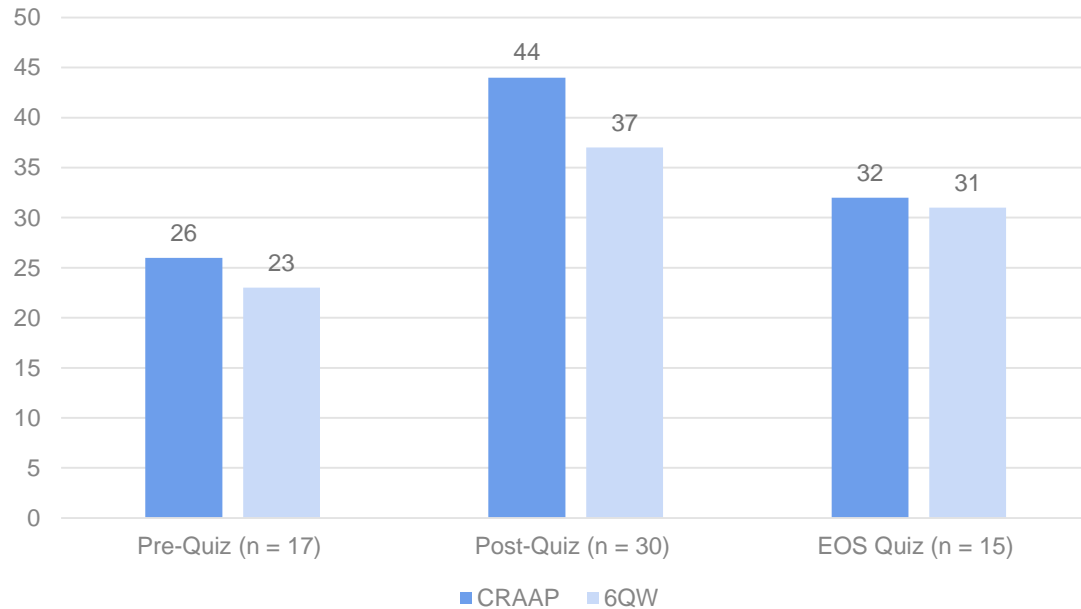
Evaluated student reasoning using a scale of 1 – 4

1. Incorrect use of criteria
2. Used criteria correctly & incorrectly, mostly incorrectly or missed a significant piece of criteria
3. Used correct or incorrect criteria, mostly correct
4. Used correct criteria

# Using Domain Name in Evaluation



Percent of Respondents mentioning looking at domain name to evaluate credibility





# Teaching Implications

What does this mean for librarians and teaching faculty?

# Instruction Librarians



Students use inappropriate shortcuts

- Often taught in K-12 like domain name

Flawed logic is prevalent

- Even when choosing appropriate sources

Reinforcement is needed

- We cannot check off teaching evaluating sources after one library session.

Struggle with non-scholarly sources

# Teaching Faculty



- Are there faulty assumptions of student understanding and knowledge?
- Why are the students using superficial methods?
- Is a one-time library research session sufficient?



**THANKS!**



This presentation is  
available at:

<http://hdl.handle.net/1805/24140>

**ANY QUESTIONS?**

# References



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- Gerjets, P., Scheiter, K., & Cierniak, G. (2009). The scientific value of cognitive load theory: A research agenda based on the structuralist view of theories. *Educational Psychology Review*, 21(1), 43-54. <http://dx.doi.org/10.1007/s10648-008-9096-1>
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