

Evaluating Information Resources in the Era of Deceptive Information

The Librarian's Expanding Role

Presented by ASME as a Service to Our Librarian Community

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Introduction

Evaluating information resources in the era of deceptive information: A new set of challenges.

This document provides a snapshot of scholarly librarians' expanding role in differentiating legitimate information resources from deceptive ones in order to guide their user communities towards adopting best practices.

Librarians, as trained information professionals, are increasingly called upon to apply their expertise to many different aspects of their users' professional activities in part because of the proliferation of information on the web and its ease of access.

Librarians are often active participants in the dialog between publishers and information users surrounding scholarly publishing and publication practices. They are particularly well positioned to share their collective expertise with researchers in academic, corporate, and governmental settings regarding how to identify reliable, trusted information resources and avoid those that are questionable. Information literacy education organized by the library plays a significant role, for example, in creating awareness of how scholarly content is produced and the real value of legitimate open access initiatives. It can also provide deeper understanding of the value of rigorous peer review, prestigious editorial boards, inclusion in reputable abstracting and indexing services, etc.

Not only are librarians instrumental in helping researchers access scientific, technical, and medical (STM) content, but they can also offer sound advice about how to identify and avoid predatory journals. Librarians can use their expertise and apply best practices to identify journals that should be avoided or supported and contribute to other initiatives aimed at deterring predatory publishers.

Concurrently, there has been an increase in the number of predatory conferences. Although not traditionally within the role of the librarian to alert researchers to potential questionable scientific conferences, it is increasingly falling within the scope of avoiding deceptive information.

Drawing on guidelines from professional societies such as the American Library Association (ALA), the Association of College and Research Libraries (ACRL), the International Federation of Library Associations and Institutions (IFLA), and other leading institutions, this document presents strategies and tactics for evaluating information resources, a framework for designing information literacy programs, useful checklists to evaluate specific web resources, and steps for identifying predatory publisher and conference organizers.



Information Literacy Education

Librarians: Helping users navigate a complex information landscape.

Guiding librarians in instilling the benefits of information literacy throughout their user communities is the American Library Association (ALA), Association of College and Research Libraries' (ACRL) Framework for Information Literacy for Higher Education.¹ This cluster of six interconnected core concepts form the basis of instruction of information literacy to individuals throughout their academic careers and beyond.

The Framework is intended to provide recommendations and guidance rather than being prescriptive. It enables librarians, faculty, and other stakeholders to design programs that are best suited to their own institution. Within this context, information literacy is defined as “the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning.”

Framework for Information Literacy for Higher Education – A Snapshot

The six pillars presented within this Framework can be adopted to develop an information literacy program in their entirety or in part, depending on what is deemed most applicable for a specific institution. **They are summarized below in alphabetical order since these concepts are not intended to be implemented in a specific order. Select knowledge practices are included for each pillar within the Framework.**

AUTHORITY IS CONSTRUCTED AND CONTEXTUAL

Information resources reflect their creators' expertise and credibility

Knowledge Practices:

- Define different types of authority, such as subject expertise, societal position, or special experience.
- Use research tools and indicators of authority to determine the credibility of sources, understanding the elements that might temper this credibility.
- Recognize that information may be perceived differently based on the format in which it is packaged.

INFORMATION CREATION AS A PROCESS

Information in any format is produced to convey a message and is shared through various delivery methods

Knowledge Practices:

- Articulate the capabilities and constraints of information developed through various creation processes.
- Assess the fit between an information product's creation process and the information application need.
- Articulate the traditional and emerging processes of information creation and dissemination within a discipline.

INFORMATION HAS VALUE

As a commodity, as a means of education, and as a means to influence

Knowledge Practices:

- Give credit to the original ideas of others through proper attribution and citation.
- Understand that intellectual property is a legal and social construct that varies by culture.
- Articulate the purpose and distinguishing characteristics of copyright, fair use, open access, and the public domain.

RESEARCH AS INQUIRY

Research is iterative and depends upon asking increasingly complex or new questions

Knowledge Practices:

- Determine an appropriate scope of investigation.
- Deal with complex research by breaking complex questions into simple ones, limiting the scope of investigations.
- Use various research methods based on need, circumstance, and type of inquiry.

SCHOLARSHIP AS CONVERSATION

Communities of scholars, researchers, or professionals engage in sustained discourse

Knowledge Practices:

- Cite the contributing work of others in your own information production.
- Contribute to scholarly conversation at an appropriate level.
- Critically evaluate contributions made by others in participatory information environments.

SEARCHING AS STRATEGIC EXPLORATION

Searching for information is often nonlinear and iterative, requiring the evaluation of a range of information sources and the mental flexibility to pursue alternate avenues as new understanding develops

Knowledge Practices:

- Determine the initial scope of the task required to meet information needs.
- Identify interested parties who might produce information about a topic.
- Define and refine needs and search strategies as necessary based on search results.

Tips for Evaluating Specific Web Resources

Librarians: Media and information literacy educators and advocates.

Librarians routinely evaluate web resources and help users navigate the complexities of determining which sources are reliable and which are not. **Media and information literacy education offered by the library plays a key role in guiding users.**

The two organizations listed below provide valuable checklists for evaluating web resources. There are many other similar resources that can guide users to reliable information.

IFLA recommendations for evaluating resources

The global voice of the library and information profession, the International Federation of Library Associations and Institutions (IFLA) is the leading international organization representing the interests of library and information services and their users. In 2016, IFLA issued a set of simple steps entitled “How to Spot Fake News”² to help detect deceptive information resources. These recommendations have been extensively shared by libraries around the world.

CONSIDER THE SOURCE

Click away from the story to investigate the site, its mission and its contact information.

CHECK THE AUTHOR

Do a quick search on the author(s). Are they credible? Are they real?

CHECK THE DATE

Reposting old news stories doesn't mean they're relevant to current events.

CHECK YOUR BIASES

Consider if your own beliefs could affect your judgement.

READ BEYOND

Headlines can be outrageous in an effort to get clicks. What's the whole story?

SUPPORTING SOURCES

Click on those lines. Determine if the information given actually supports the story.

IS IT A JOKE?

If it is too outlandish, it might be satire. Research the site and author to be sure.

ASK THE EXPERTS

Users should ask a librarian or consult a fact-checking site.

Final word of advice: Beware of content farms

A content farm is a website that offers a large quantity of low-quality, short articles on general topics with no citation (and sometimes copies from other websites), largely generated by freelance writers. Students and early career researchers (ECRs) in particular may be susceptible to be lured to these sites, which are strategically written with embedded keywords to maximize retrieval via search engines. Some search engines continue to refine their algorithms so that more reliable sites will be ranked more highly.

The CRAAP Test

Another widely acknowledged yardstick for evaluating resources was developed in the United States by librarians at the California State University Meriam Library (Chico, CA, USA). Commonly known by its acronym, the **CRAAP Test**³ establishes a valuable checklist for determining whether a source can be trusted.

CRAAP is an acronym for **Currency, Relevance, Authority, Accuracy, and Purpose**. The user should apply the following questions as part of the resource evaluation process:

CURRENCY: THE TIMELINESS OF THE INFORMATION

- 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: THE IMPORTANCE OF THE INFORMATION FOR YOUR NEEDS

- 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 that you will use?
- Would you be comfortable citing this source in your research paper?

AUTHORITY: THE SOURCE OF THE INFORMATION

- 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: THE RELIABILITY, TRUTHFULNESS, AND CORRECTNESS OF THE CONTENT

- 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, grammatical, or typographical errors?

PURPOSE: THE REASON THE INFORMATION EXISTS

- What is the purpose of the information? Is it to inform, teach, sell, entertain, or persuade?
- Do the authors/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?

² IFLA, “How to Spot Fake News,” last modified January 7, 2019, accessed March 1, 2019, <https://www.ifla.org/publications/node/11174>

³ Meriam Library, California State University, Chico, CA, “Evaluating Information – Applying the CRAAP Test,” last modified September 17, 2010, accessed March 1, 2019, https://www.csuchico.edu/lins/handouts/eval_websites.pdf

Tips for Identifying Predatory Publishers and Questionable Conference Organizers

Librarians: Helping researchers avoid dubious journals and conferences.

In recent years, in abuse of the spirit of the open access movement, there has been a **proliferation of predatory journals** portraying themselves as legitimate publications within the scientific, technical, and medical (STM) publishing landscape. Some predatory publishers have recently moved into multimedia, charging high fees for posting videos. Another growing concern is the increasing number of **dubious conferences organized by predatory publishers** and other less than scrupulous organizations.

Individuals in the STM community are frequently approached by these publishers and conference organizers, and it is not uncommon for people from many countries to fall prey to their tactics, contributing articles to fraudulent journals or participating at questionable conferences.

Librarians should teach their users about predatory publishers and conference organizers so that they are not fooled.

“If in doubt, check it out”

- Don't assume all journals are trustworthy!
- Don't assume all scientific conferences are legitimate!
- Don't submit papers to journals or conferences that appear questionable!

Some warning signs

It can be difficult to differentiate between authentic journals or conferences and ones that are suspicious. Scammers are becoming more adept at mimicking professional and credible solicitations. Librarians should educate their community about deceptive practices and potential warning signs in order to judge legitimacy.

PREDATORY JOURNALS

- Vague or poorly stated/conceptualized aims & scope
- A reputable journal with a very similar title exists
- Falsified editorial board members, reviewers, or endorsements
- Website containing spelling and grammatical errors
- Distorted or fuzzy images (possibly unauthorized usage)
- Overly flattering and/or hard sell manuscript solicitation emails
- Extremely rapid manuscript acceptance (which could be indicative of no peer review)
- Poorly documented manuscript submission procedures
- Exploitation of the open access model
- Submission or hidden fees requested upfront
- Author charges for non-existent services
- No retraction, copyright, or digital preservation policies
- Contact names or information unclear or not available
- Public email addresses (without publisher or institution name), e.g. gmail.com or yahoo.com
- Journal not listed in reputable abstracting and indexing databases like Web of Science, Scopus, and others

PREDATORY CONFERENCES

- Conference has an overly ambitious title and the program is too broad
- Renowned organizations are purportedly sponsoring a low profile conference
- A reputable conference with a suspiciously similar conference name
- Conference is unusually frequent
- Partnership with a recognized predatory publisher or unknown institution or commercial entity
- Speakers who are unknown in the field
- Website containing spelling and grammatical errors
- Distorted or fuzzy images (possibly unauthorized usage)
- Overly flattering and/or hard sell solicitation emails to present or attend
- Extremely rapid acceptance of conference papers (which could be indicative of no peer review)
- Organizers charging higher than normal fees
- Unclear information about the publication of conference proceedings
- Contact names or information unclear; email addresses without conference organizer affiliation (e.g. gmail.com or yahoo.com)

What can librarians do to avoid pitfalls?

Here are a few tactics that librarians can employ to steer their user community away from predatory journals and disreputable conferences:

- Create specific webpages and/or LibGuides or PubGuides that address these with links to helpful resources like **Think Check Submit** (thinkchecksubmit.org) and **Think Check Attend** (thinkcheckattend.org)
- Advocate for and include instruction modules in information literacy training programs
- Investigate journal and/or publisher using reputable abstracting and indexing databases like Web of Science, Scopus, and others
- Consult Journal Impact Factors, journal h-indexes, and other recognized journal evaluation metrics
- Search for journal citation data

References, Resources, and Useful Links

References

¹Adapted from “Framework for Information Literacy for Higher Education,” filed by the ACRL Board on February 2, 2015, adopted by the ACRL Board, January 11, 2016, accessed March 1, 2019, <http://www.ala.org/acrl/standards/ilframework>

²IFLA, “How to Spot Fake News,” last modified January 7, 2019, accessed March 1, 2019, <https://www.ifla.org/publications/node/11174>

³Meriam Library, California State University, Chico, CA, “Evaluating Information – Applying the CRAAP Test,” last modified September 17, 2010, accessed March 1, 2019, https://www.csuchico.edu/lins/handouts/eval_websites.pdf

Resources

Austin Community College, “Low Quality Websites: Content Farms: Avoid Content Farms,” last modified January 22, 2019, accessed March 1, 2019, <http://researchguides.austincc.edu/c.php?g=435086&p=2965634>

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Shamseer, L. et al, 2017, “Potential predatory and legitimate biomedical journals: Can you tell the difference? A cross-sectional comparison,” *BMC Medicine*, 15(28), <https://doi.org/10.1186/s12916-017-0785-9>

Useful Links

Clarivate Analytics Master Journal List: <http://mjl.clarivate.com>

Committee on Publication Ethics: COPE: <https://publicationethics.org/core-practices>

Directory of Open Access Journals: DOAJ: <https://doaj.org>

Scopus Content: <https://www.elsevier.com/solutions/scopus/how-scopus-works/content>

Stop Predatory Journals: <https://predatoryjournals.com/about>

Think. Check. Submit.: <https://thinkchecksubmit.org>

Think. Check. Attend.: <https://thinkcheckattend.org>