

ALTMETRICS AND INFORMATION LITERACY

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BY KELLY MARIE BLANCHAT

Overview and Definition

Traditionally, librarians and researchers have used citation metrics to measure scholarly impact using services such as Journal Citation Reports (Thomson Reuters) and SCImago Journal & Country Rank (Scopus), or by calculating a citation analysis or an author's h-index (Galloway 2013). Though these metrics are useful for collection development, tenure and promotion, and scholarly communication, they are often too specific for student engagement. Altmetrics—or “alternative metrics”—measure user engagement with scholarly works at the article level in real time using counts outside of traditional scholarship. These counts range from downloads and views, social media engagement, and references in news and blogs to shared citation manager lists. Though neither traditional metrics nor altmetrics provide a complete picture on their own, altmetrics allow for a broader picture of engagement that is more accessible and relatable for students.

The following is a sample of platforms that have added altmetrics scores to article and chapter-level content: BioMed Central, EBSCOhost, Elsevier, Frontiers Media, the JAMA Network, Karger, Michigan Publishing, Nature Publishing Group, Public Library of Science (PLoS), Scopus, Summon (ProQuest), Taylor & Francis, EBSCO Discovery Service, Weave: Journal of Library User Experience, and Wiley. Many of these platforms have integrated Altmetric from Digital Science. Another altmetrics service used is PlumX Metrics from Plum Analytics, originally an EBSCO company and recently acquired by Elsevier; both providers integrate PlumX Metrics onto their platforms. PLoS uses its own service called PLoS ALMs (Article Level Metrics). The altmetrics badges from these three providers are distinct: Altmetric has a multi-color donut (Image 1), PlumX Metrics has a multi-color node (Image 2), and PLoS ALMs has a grid of 4 monochrome boxes (Image 3). Their platform integrations are not unlike a Web of Science and Scopus metrics.



Image 1

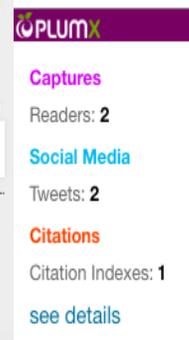


Image 2

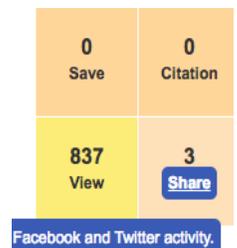


Image 3

Why Do You Need to Know?

As more content platforms embed altmetrics scores into article and chapter level content—right alongside PDF download and citation export options—students of all levels have more opportunities to engage with altmetrics on their own. This situation has the potential to change *when* students are introduced to scholarly metrics, from h-indexes to journal rankings, which are usually not introduced until late in undergraduate course work or in graduate school.

As instruction librarians work with users on content retrieval and analysis, it is important to have a grasp of what altmetrics do, from how they appear to how to retrieve them and interpret the results. The colorful and seemingly “friendly” appearance of altmetrics scores—compared to the very cut-and-dry display of Web of Science and Scopus metrics—means that not only are users being presented with altmetrics upfront, but that they may be more willing to engage with them.

Current Applications in Academic Libraries and Higher Education

An internet and scholarly literature search on altmetrics will bring back an abundance of information about how librarians can use and understand altmetrics, but most of the literature focuses on applications for collection development and scholarly communication. Still, it is important for librarians involved in instruction & technology to understand altmetrics and be prepared to teach to them or to explain the scores (see "Further Readings").

Incorporating altmetrics into a library lesson plan can leverage any number of knowledge practices and dispositions from the ACRL Framework. For instance, altmetrics record user engagement at the article level in real time, pulling metrics of user engagement with scholarship from sources such as social media, which can be broken down into the following ACRL Framework segments:

- Engagement with multiple resource types (scholarly literature, grey literature, datasets, news and blogs, etc.) as "Information Creation as a Process"
- Real-time engagement with social media as "Scholarship as Conversation"
- Cross-disciplinary engagement as "Authority is Constructed and Contextual"

Using altmetrics in information literacy instruction can also provide an opportunity to scaffold larger concepts that are likely to arise later in a student's career, such as selecting quality content from a result list, identifying high-profile scholars and publications, verifying accuracy of research claims, and understanding the impact of cited works, to name a few.

One way to engage with altmetrics in a library instruction setting is to gather a list of articles and book chapters available online from your library. This can be done as a small bibliography or, if your library has a discovery service that has enabled altmetrics, as a prepared search in a discovery layer. For either option, make sure that the resources in the list have an altmetric score.

To start the lesson, have students pick one article or book chapter from the list that interests them. Ask students to write down a few words and

phrases that they would associate with the resource based only on the article title.

Next, direct students to look at the article title *and* the altmetrics data. After about 5 minutes of altmetrics exploration, have students reflect either individually or in pairs on the impact of the following factors on their perception of the resource:

- **Global engagement:** What parts of the world *are* and *are not* engaging with the resource online? What limitations are there to recording only social and online engagement?
- **Social media:** Who is sharing the resource? Is the share positive, negative, or neutral?
- **News and blogs:** Are the news publications credible sources? Do they have a political slant? When were they written?
- **No data:** What does the lack of any of these data points tell you about the resource?

After five to eight minutes of student reflection, bring the class back together to talk in a group about their findings. Ask students which data points had the biggest impact on their understanding of the resource.

Potential Hurdles

One of the biggest pitfalls of altmetrics is that social media engagement can be bought and sold, thereby potentially inflating recorded engagement. Current events in the U.S. should make this point easy for students to understand. However, since the ACRL framework emphasizes critical engagement, this pitfall can be leveraged with the Framework segment "Information Has Value."

For librarians interested in engaging with altmetrics, one potential hurdle is that institutions can choose to suppress altmetrics in a discovery layer. In such situations, altmetrics will only be available at individual content platforms, and the consistency of providers and display for these services can differ widely.

Conclusion

It can be discouraging for instruction librarians searching for literature on metrics, particularly altmetrics, due to the heavy focus on collection development, scholarly communications, and

STEM. With the growing popularity of altmetrics, it is important for librarians working in instruction to become acquainted with this technology.

"[PlumX Metrics](#)." 2018. Plum Analytics.

The brief lesson plan described here is just one way to engage early-career students with altmetrics, which they will undoubtedly encounter in their own explorations for online research. Another way to start thinking about using altmetrics as a non-STEM or collection development librarian is to leverage the literature in those fields, and simply scale the lesson objectives and outcomes to your audience.

As an instruction librarian myself, I hope to see more engagement and experimentation with these tools by my colleagues in the future.

Tools Discussed (if appropriate)

- [Altmetric.com](#) (altmetrics aggregator from Digital Science)
- [PLoS ALMs](#) (altmetrics aggregator from Public Library of Science)
- [PlumX Metrics](#) (altmetrics aggregator from Plum Analytics)

References

Galloway, Linda M., Janet L. Pease, and Anne E. Rauh. 2013. "Introduction to Altmetrics for Science, Technology, Engineering, and Mathematics (STEM) Librarians." *Science & Technology Libraries* 32 (4): 1-11.

Further Readings

"[A Comprehensive Assessment of Impact with Article-Level Metrics \(ALMs\)](#)." 2018. PLoS.

"[The Donut and Altmetric Attention Score](#)." 2018. Altmetrics. Accessed June 20.

"[Framework for Information Literacy for Higher Education](#)." 2015. American Library Association.

Heller, Margaret. 2013. "[What Should Technology Librarians Be Doing About Alternative Metrics?](#)" *ACRL TechConnect*.