

12-29-2014

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Recommended Citation

Leon, R. (2014). Teaching Matters: The Information Literacy Implications of the Bohannon Sting. *Communications in Information Literacy*, 8 (2), 160-166. <https://doi.org/10.15760/comminfolit.2014.8.2.165>

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THE INFORMATION LITERACY IMPLICATIONS OF THE BOHANNON STING

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Communications in
INFORMATION LITERACY

TEACHING MATTERS, EDITED BY PATRICK RAGAINS AND PATRICIA ZAUHA

INTRODUCTION

Information brokers. Arbiters of quality research literature. Watchdogs who keep track of the nature of scholarly communication. These are all definitions of librarian.

In October 2013 we learned that the primary mechanism by which we fulfill the aforementioned roles had changed while we were looking elsewhere. And we still largely failed to hear the call to arms. At that time, we learned that a significant percentage of open access journals, without clear sorting by any meaningful criteria, do not uphold peer review or scientific scrutiny in their publication process—despite various claims to the contrary. We also learned that this disintegration of our easy dependence on the peer review checkbox, and all of its implied indicators of rigor and quality and place in the conversation, could not be assumed to be constrained to open access journals.

THE BOHANNON STING

The incident that raised this clarion for me has come to be known as the Bohannon OA Sting (Bohannon, 2013). John Bohannon, an editor for the journal *Science*, sent out versions of a bogus article (by invented authors, at invented universities) to over 300 open access journals. The article claimed to have found a cure for cancer in lichen. According to Bohannon, the scientific flaws in the article “were both obvious and ‘boringly bad.’” The journals were pulled in relatively equal proportion from the Directory of Open Access Journals, or DOAJ (2013)—called by Bohannon “the gold standard for open access” and from

Beall’s Predatory Journal (Beall, 2014) list. The article was accepted for publication at 157 journals, applying varying degrees of visible peer review along the way; the journals accepting the article included those from both the DOAJ and Beall lists, and included journals published (or hosted) by leading scholarly publishers Elsevier, Sage, and Wolters Kluwer.

In addition to encountering poor or non-existent peer review from such a significant proportion of editors, Bohannon also found that the editorial boards and stable of peer reviewers listed by the journals were, in some cases, also stocked with folks who had no knowledge of themselves being listed on those boards, or as reviewers for those titles.

Before going further, I want to say that this column will be looking specifically at peer review and the information literacy implications of this sting; whether the journals were or were not open access is irrelevant. The apparent racism of the sting¹ is also not pertinent to this article, nor are any of the charges of Bohannon’s bad behavior (see Innes-Ker, 2013, Davis, 2013a) poor statistical control, or other concerns. The sting, and the ensuing discussions² convinced me that the peer review checkbox had become incontrovertibly corrupted as a useful tool or standard for conveying that quality control had been applied. As had, to some degree, the ability to judge an unknown journal by its publisher, its editorial board, or its stated practices.

To reiterate, regardless of all the challenges, upsets, and problems with Bohannon’s experiment, I found one result resonant: Librarians would have to change the way

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they approached discussions of quality and identification of the same in our work with researchers at all levels. Peer review itself was no longer reliably meaningful. What signposts were left us, in our capacities as instruction librarians, given this turn of events?

Still not convinced? In April of 2014, Nature reported in its news blog that publishers Springer and IEEE (publishers we would consider quality) were withdrawing 120 peer reviewed conference papers from over 30 published proceedings. The papers had been shown to be computer generated (Van Noorden, 2014). Not only was peer review a failed marker, but conference papers are revealed to be computer generated? (This author's mind boggles at the thought of those conferences!) And two more major publishing houses are now implicated in poor quality control. The question echoed for me: What was left to identify quality in facile ways, in ways teachable to library researchers? Not peer review, not publisher. What else?

As these stories broke, I expected to hear immediate discussions in the librarian social media universe of how we might identify quality, if we could no longer count its value on a declaration of peer review, or publication by a major house or scholarly society; if we could no longer assume that the mastheads of journals told the truth about their editorial boards and stable of reviewers; and if DOAJ was no longer a mark of quality. I heard nothing of the kind. I heard protests about smearing too darkly the doors of open access, of poor manners and quick conclusions; librarians involved in advocating for open access were in the

mix, trying to make sense of the article. But not public services librarians. No one was talking in public about what this article revealed about library resources and how we set them up for access and assessment by our patrons.

All I could think about were the information literacy implications. But I could not find the conversations delving into those implications.

Today's information environment is complex, and library research instruction is rarely able to deliver the whole story. But these incidents raise the question: What is the role of information literacy instruction and librarians in ensuring that our undergraduate students, graduate students, and researchers are as aware as they need to be about identifying quality journal literature?

Happily, in this forum, we can raise thorny questions, and throw the doors open and see what comes from the ensuing discussion. In these pages, I hope to ignite some conversation. How has the apparent corruption of authority markers that the consumers of journal literature have come to depend upon, impacted what we do as academic librarians tasked with information literacy, reference, and even the collection of quality literature? And how should it?

The information literacy-related questions that arise fit into several categories: What is the library's role (or the librarian's role) in educating graduate students and faculty about the peer review process? How do we teach the issue of quality to our researchers at their various levels? How does this new emphasis on the importance of identifying

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quality at the most complex levels intersect with the proposed ACRL Threshold Concepts (especially “Scholarship is a Conversation” (Gibson & Jacobson, 2014a) and “Authority is Constructed and Contextual” (Gibson & Jacobson, 2014b))? And following that, as I always follow grounded questions about the new threshold concept framework, how can we, and how will we be able to integrate this complex issue into our inadequate and inevitable one-shot sessions, or expand our range and influence to integrate new content into our outreach?

PEER REVIEW: THE PROCESS

Let us look first at our role in discussing or teaching about the role of peer review, and the process of peer review, in relation to the one’s learning about participating in the world of academic publishing. What is our role in this area with graduate students and post-docs?

If we make a generous assumption—that folks who publish in journals with inadequate or non-existent peer review are doing so not out of avarice or willful disregard for the scholarly process—we are left with the conclusion that a significant number of our researchers are unaware of what peer review is supposed to look like, and how it is supposed to improve their work. No doubt some researchers are uncaringly publishing in these journals because of high acceptance rates and the demands of tenure. But some are stumbling into these journals unknowingly. Since the latter assumption is the only one of these scenarios where we might have a role to play or an opportunity to impact change, let us stay with it. When I ponder how

researchers might unknowingly be submitting to non-reputable journals, I immediately wonder if graduate students are being educated about what the peer review process should look like (and what reputable publishers should look like)? And I become curious how many of us are in any way aware of what kind of training our graduate students get in this area. And then I become more curious whether any among us have taken up the task of teaching the peer review process.

Given the previous question, should we assume our faculty know what peer review is supposed to look like? If we are grappling with the question of whether the peer review process is learned in graduate school, can we safely assume that our faculty (and indeed, if we ourselves) know what it is supposed to look like? After all, we know for a fact that predatory publishing practices (where publishers take advantage of the author-pays model in OA publishing to make money without providing the promised peer review or other quality assurances) is growing, and that means scholars are publishing their research in those venues. I would rather not play not-in-my-back-yard, and instead work out relationships with our departmental chairs and deans to learn if we can find a way through this potentially treacherous territory.

TEACHING QUALITY

Teaching quality could be a stripped-down utilitarian definition of what instruction librarians do in their sessions. In no small part, we teach our students how to identify the highest quality information for their research needs. We teach a number of

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criteria and lean on a number of markers, many of which have now been shown to be undermined. How we proceed is the real question raised by this crisis. The identification of quality is different for different audiences; how might we address this issue with lower division undergraduates, graduate students, faculty, and the researchers at every level we do not interact with outside of our interfaces?

Working with graduate students to identify quality might continue much as we have always done. Their guiding faculty almost certainly advise them which journals to pay attention to, and they are in the process of learning the key methods and researchers in their field. They are sophisticated enough to understand that methodology and citations should play key roles in determining the worth of an article. We only need to add practices for noticing and perhaps verifying an author's credentials, introduce the power of bibliometrics and altmetrics³, and ensure they know that the peer review checkbox is only an indicator of a journal's stated practices to the knowledge they should be building in their coursework. At this level, quality is largely identified by their advising faculty and by the content of the articles themselves.

For research faculty, quality is frequently pre-identified as specific journals held in high regard since their days of graduate study. Methodology, altmetrics, and high citation counts are the most rigorous quality indicators, and our response to the current situation might simply be to reinforce these sophisticated methods. In doing so, we could easily include information about the devaluing of the peer review indicator. Both faculty and graduate students can be

equipped with sophisticated criteria for identifying quality; the opportunity to make a difference comes in working with them on what the peer review process should look like, and discussing the reasons why peer review is so valuable to the scholarly conversation.

And that brings us to the truly tricky (and very large) populations: the ones who do not pass through instruction sessions, and the researchers working without deep subject knowledge. These users most of all are subject to the facile checkbox stamp-of-approval of the peer-reviewed journal. It is a sticky indicator in article searching, and one we urge on to our users via our interfaces. Unfortunately, we have as much control over database interfaces as we do over the peer review process itself; removing the checkbox is not a reasonable expectation.

This is the area where I feel the most concern, because it dovetails with the most challenging aspects of effectively integrating information literacy into college curriculum. I believe we do a disservice to our students if we do not start their education in scholarly publications with some instruction about how to compensate for a diseased peer review system. But I am at a loss. The unsophisticated researcher will navigate all the quality markers we provide for them, even though these markers are no longer valid. The library stamp of approval on resources in our collection has been corrupted by Big Deal⁴ purchasing practices and is further degraded by the presence of journals we would never have selected in those packages, and those which do not meet our standards. The easy shorthand limit of a "peer-reviewed articles" checkbox has always been weak to

librarians, but the Bohannon incident renders it close to useless even as a naïve criterion. Researchers at the unsophisticated level are unable to evaluate method, citations, or even author qualifications or publisher reputation.

Since we are now being asked to reframe our approach to teaching information literacy skills and dispositions via the introduction of the new ACRL Threshold Concepts framework, it is a good time to broach the question of teaching quality at these under-supported levels. Two threshold concepts apply: “Scholarship is a Conversation” and “Authority is Constructed and Contextual.” Perhaps the only solution, as we determine what using the new framework will look like, is to pay especial attention to questions of how to teach unsophisticated researchers about scholarly quality.

I see this column as a beginning. From here I hope to see the discussion spread, on Twitter and Facebook and blog posts, in sessions at conferences and publications in our own literature. What other questions about information literacy arise in the light of these incidents? What is within our control? Is there really nothing we can do about the nature of scholarly communication, the Big Deal collection practice, and interface design issues? Have others identified shareable, actionable activities, lessons, or other tools we can implement in our own practice?

ENDNOTES

1. The racism claim is leveraged due to Bohannon’s use of fictional African names for the authors of his article, and

his use of fictional African universities.

2. Searching the terms *Bohannon sting* will take you into the myriad responses, but for a good follow-up see Davis, “[Post Open-Access Sting](#)” (Davis, 2013b)
3. Altmetrics are alternative measures of impact, measuring social media and Google Scholar impacts, among others. See [Roemer & Borhardt](#) for detailed information. (Roemer & Borhardt, 2013).
4. See Frazier, 2001 for early description of the Big Deal journal packages.

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This column focuses on the conceptual and practical aspects of teaching information literacy. Column co-editors Patrick Ragains and Janelle Zauha write about trends and issues that have come to our attention, but also solicit contributions to this space. Readers with ideas for Teaching Matters may contact Patrick Ragains at ragains@unr.edu, or the editors of Communications in Information Literacy at editors@comminfolit.org.

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