

Quantitative Evaluation of Publication Impact: A Guide

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Introduction

The overall objective of the promotion and tenure section of the NULTA contract is for you to create a comprehensive portfolio crossing the domains of teaching, scholarship, and service. This guide is designed to assist you in complying with the scholarship component as described in the contract:

When presenting evidence of scholarship it is the responsibility of the candidate to communicate ... the nature of his/her scholarship ... in their self-evaluation essay. Candidates should also present evidence of the impact of their research (for example, number of libraries that have purchased a book for their collection, number of libraries that subscribe to a journal in which they have published, number of citations of an article, book, or other scholarly work, and/or testimony from scholars outside of Niagara University).

Below you will find information about quantitative ways to measure the reputation of your publications. No single measure tells the whole story, but a pattern emerges when you use a variety of indicators. Please note, however, that it is also important for your analysis to include a subjective component where you describe the context and value of your publication record.

Articles Published by Traditional Publishers

Citations to Article

Significance: Citations are the most direct measure of the impact of an article.

Caveats: Citing frequency varies by discipline. Some citations can be trivial, for example, citing an article in a long list of a required literature review. Or self cites.

Tip: Finding citations is a brute force process and is time consuming. Niagara University Library does not provide access to all the databases you need access to (for example, Web of Science and Scopus) but will send a librarian to UB to do the work. You can search Google Scholar and search within full text Library databases. Note that by default most databases search only citations and abstracts, so look for the checkbox that says something like "Search within the text." You would be looking for your work to be cited in the reference lists of other authors.

Don't forget references to your work that could appear in books. Search within Ebrary (<http://site.ebrary.com/lib/niagara/home.action>) and Google Books (<http://books.google.com/>)

Also, set up an author page in Google Scholar. You tell Google what your publications are and it will notify you when something is cited. It is not comprehensive but is still useful. Check it out here: <http://scholar.google.com/intl/en-US/scholar/citations.html>

Is the Article Peer Reviewed?

Significance: Self-evident. The journal itself will identify if it is peer reviewed, so this is easy to demonstrate.

Caveat: Nearly every publication that claims to be a journal says it is peer reviewed, but this varies in rigor and not all articles in peer reviewed journals are research articles. In an era of proliferating journals, the fact that a journal is peer reviewed is not in and of itself a measure of reputation.

Manuscript Acceptance Rate

Significance: A possible measure of the exclusivity of the journal.

Caveat: Often more important than acceptance rates is the rigor of peer review and editing.

Tip: Published acceptance rates can be hard to find. For most disciplines, you usually must contact the editor. But if your research is education or business-related, check Cabell's:

<http://ezproxy.niagara.edu/login?url=http://www.cabells.com/members.aspx>

Number of Libraries that Provide Access to the Journal

Significance: Indirectly a measure of reputation and a direct measure of the accessibility of the research.

Caveat: This number is reliable indicator but doesn't work for recently created journals. For budget reasons, libraries are reluctant to add new journal titles these days.

Tip: Find this information at <http://worldcat.org>. Do an advanced search that lets you limit by journal as a format. Make sure you are counting all the editions. WorldCat usually provides a record that combines all the editions.

Is the Journal Indexed?

Significance: Inclusion in subject specific indexes is a measure of reputation. Inclusion in the large, multi-disciplinary databases can be an indicator that the journal is core to its discipline.

Caveat: This number is a reliable indicator but doesn't work as well for recently created journals. In general, however, if a journal is not covered by the core indexes of its discipline, that tells you something.

Tip: Check the publisher's web site, where you often find a list of where the journal is indexed. Otherwise, you may need to search *Ulrich's Periodical Directory*, which Niagara University does not provide access to, but a librarian can travel to UB to do the search.

Quantitative Impact Factor of the Journal

Significance: Provides a way to rank journals by reputation.

Caveat: It can be difficult to understand and explain to others the various methods of estimating impact. Doesn't measure the impact of an individual article. To learn more about the limitations of impact factors take a look at these partisan, though entertaining, critiques:

<http://occamstypewriter.org/scurry/2012/08/13/sick-of-impact-factors/>

<http://francescientist.wordpress.com/2011/01/15/impact-factor-who-are-you-bullshitting/>

And note the movement, called altmetrics, to broaden the definition of impact:

<http://altmetrics.org/manifesto/>

Tip: Below are some sites that provide impact factors and rank journals

Impact Factor via ISI Journal Citation Reports (JCR)

A subscription database not owned by NU that ranks journals by subject. Provides a number of metrics including impact factor, which is a measure of the frequency with which the "average article" in a journal has been cited in a time period. JCR is perhaps the easiest place to find rankings within a discipline. A high ranking is good of course, but note that a low ranking isn't bad because the database is selective in what it ranks. Just being included in JCR is a measure of reputation.

Eigenfactor scores and Article Influence Scores

Different disciplines have different standards for citation and different time scales on which citations occur. The average article in a leading cell biology journal might receive 10-30 citations within two years; the average article in leading mathematics journal would do very well to receive two citations over the same period. By using the whole citation network, the algorithm automatically accounts for these differences and allows better comparison across research areas.

<http://www.eigenfactor.org/>

Source Normalized Impact per Paper (SNIP)

Measures contextual citation impact by 'normalizing' citation values - takes a research field's citation frequency into account. Considers immediacy - how quickly a paper is likely to have an impact in a given field.

<http://www.journalindicators.com/>

SCImago Journal & Country Rank

Journals can be analyzed separately and viewed within a subject ranking.

<http://www.scimagojr.com/index.php>

Publish or Perish (PoP)

Publish or Perish is a software program that retrieves and analyzes academic citations. It uses Google Scholar to obtain the raw citations, then analyzes these and presents the following statistics:

- * Total number of papers
- * Total number of citations
- * Average number of citations per paper
- * Average number of citations per author

- * Average number of papers per author
- * Average number of citations per year
- * Hirsch's h-index and related parameters
- * Egghe's g-index
- * The contemporary h-index
- * The age-weighted citation rate
- * Two variations of individual h-indices
- * An analysis of the number of authors per paper

<http://www.harzing.com/pop.htm>

Google Scholar Metrics

Ranks the top journals in various disciplines:

http://scholar.google.com/citations?view_op=top_venues&hl=en

Articles in Open Access Electronic Journals

Citations to Article

Significance: Citations are the most direct measure of the impact of an article.

Caveat: Citing frequency varies by discipline. Some citations can be trivial, for example, citing an article in a long list of a required literature review. Or self cites.

Tip: Finding citations is a brute force process and is time consuming. Niagara University Library does not provide access to all the databases you need access to (for example, Web of Science and Scopus) but will send a librarian to UB to the work. You can search Google Scholar and search within full text Library databases. Note that by default most databases search only citations and abstracts, so look for the checkbox that says something like "Search within the text." You would be looking for your work to be cited in the reference lists of other authors.

Don't forget references to your work that could appear in books. Search within Ebrary (<http://site.ebrary.com/lib/niagara/home.action>) and Google Books (<http://books.google.com/>)

Is the article peer reviewed?

Significance: Self-evident. The journal itself will identify if it is peer reviewed, so this is easy to demonstrate.

Caveat: Nearly every publication that claims to be a journal says it is peer reviewed, but this varies in rigor and not all articles in peer reviewed journals are research articles. In an era of proliferating journals, the fact that a journal is peer reviewed is not in and of itself a measure of reputation.

Evidence of Editorial Review

Significance: For lack of a better term, some open access journals are “scholarly paper mills.” They say they are peer reviewed, but they accept manuscripts from nearly every author willing to pay the fee. The publisher does minimal copy editing and layout.

Tip: Check the articles from previously published issues. Is there evidence of editorial, copy editing, and layout support? How many articles are published each issue? If the number seems a lot higher than journals published by traditional publishers, then that could be a red flag (professional editing, copyediting, and layout are time consuming).

Is the Journal Indexed?

Significance: Inclusion in subject specific indexes is a measure of reputation. Inclusion in the large, multi-disciplinary databases can be an indicator that the journal is core to its discipline.

Caveat. This number is a reliable indicator but doesn’t always work well for recently created open access journals. Check the publisher’s web site for this information.

Tip: Often will not be indexed in the traditional indexes, but a reputable open access journal should be indexed by Google Scholar and the Directory of Open Access Journals.

Quantitative Impact Factors

See where it is covered in the section above: “Articles Published by Traditional Publishers.”

Manuscript Acceptance Rate

Significance: A possible measure of the exclusivity of the journal.

Caveat: Often more important than acceptance rates is the rigor of peer review and editing.

Tip: Published acceptance rates can be hard to find. For open access journals, you usually must contact the editor.

Downloads

Significance: A measure of interest at the very least. The number of downloads of an open access journal article can be large and is a measure of the accessibility of the research.

Tip: The editor of the journal and even possibly the author will have access to usage statistics.

Trade Journals/Newsletters/Magazines

Pretty much only three quantitative indicators are available:

Circulation: Ulrich's Periodical Directory, which Niagara does not own, often provides this information. So does the periodical itself, sometimes.

Number of libraries that provide access to the periodical: Find this information at <http://worldcat.org>. Do an advanced search that lets you limit by journal as a format. Make sure you are counting all the editions. WorldCat usually provides a record that combines all the editions.

Is the title indexed? Inclusion in subject specific indexes is a measure of reputation.

Books or Book Chapters

Citations to Book or Chapter

Significance. The most direct measure of the impact of a book or chapter. Citing frequency varies by discipline.

Caveat: Finding citations can be time consuming. Citation databases often don't hit book references (partly because of the poorer coverage of the humanities versus the sciences and social sciences.) Getting easier to search within books for references to other books.

Tip: Finding citations is a brute force process and is time consuming. Niagara University Library does not provide access to all the databases you need access to (for example, Web of Science and Scopus) but will send a librarian to UB to the work. You can search Google Scholar and search within full text Library databases. Note that the default search of most databases only looks at citations and abstracts, so look for the checkbox that says something like "Search within the text." So you would be looking for your work to be cited in the reference lists of other authors. Don't

forget references to your work that could appear in books. Search within Ebrary (<http://site.ebrary.com/lib/niagara/home.action>) and Google Books (<http://books.google.com/>)

Reputation of Book Publisher

Significance: There is no standard, widely accepted way to evaluate the reputation of book publishers, but there are common perceptions as to who the first-tier publishers are.

To get started, check this list: <http://www.sense.nl/uploads?&func=download&fileId=855>

Caveat: Beware the growing market of scholarly vanity presses. The books they publish may be of high quality if the authors make it so, but these publishers don't employ the same rigorous editing and review that top-tier publishers do.

Try search WorldCat (<http://worldcat.org>) for books produced by the publisher. Do many libraries purchase them?

Number of Libraries that Own the Book

Significance: Indirectly a measure of reputation and a direct measure of the accessibility of the book.

Caveat: This number is reliable indicator, but it takes some time for libraries to acquire books, so it will take a couple of years for library holdings of your book to peak.

Tip: Find this information at <http://worldcat.org>. Make sure you are counting all the editions. If you publish a book that is part of a series, check the number of libraries that own previous titles in the series. It is somewhat predictive of the number of libraries that may purchase your book.

Book Reviews

Significance: Self-evident.

Caveat: Edited collections and textbooks are less likely to be reviewed.

Tip: It is possible to do a pretty thorough search for book reviews, though you might want to ask a librarian to do it for you.

Conference Presentations

There isn't much out there that quantifies the reputation of conference presentations. If the proceedings are published, that will help. And the fact that a presentation was peer reviewed can be indicated. But mostly you would provide the analysis of the significance to your discipline.

Popular Press

Sometimes your scholarship reaches the popular press, and this could also be thought of as a form of impact. Of course, you will know if you are interviewed, but you might also want to document the press you received. Lexis/Nexis is a good place to start. It contains broadcast transcripts, the full text of newspapers, magazines, newsletters, and newswire services.

<http://ezproxy.niagara.edu/login?url=http://www.lexisnexis.com/hottopics/lnacademic/>

A Google search can be productive as well. You might find use or mentions of your work you didn't know about.

Final Note

This guide is general in nature and doesn't cover discipline-specific tools. Researchers in various disciplines will publish research on what the core journals are in their disciplines, though this tends not to be that helpful, as you probably already know what the top 20 journals in your field of expertise are. It is the second tier of more newly created journals that you need to learn more about.

Contact David Schoen for more information about the tools described in this guide (schoen@niagara.edu or 716-286-8002).

He will also create a report for you on up to five of your publications. Please start the process early as the reports take time to create.