Measuring quality in journal publishing: New and emerging methods

Gordon C. Tibbitts
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new and emerging methods

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August 4, 2006
Today’s Outcomes

• Discuss how to use quality to improve survival in e-space

• Learn to incorporate measures of quality (Old and New) into your strategy. So we will look at:
  – Measures for quality of research and relevance to practice
  – Measures for the quality of journals
  – Metric and bibliometric analysis
  – scholarly-driven search engines (new demands from web space)
Survival in e-space

You might Ask, “What does it all mean, and how does it apply to the work that you do as Journal Editors? How do you assess the quality of the articles submitted to you, and how then is the quality of your journals assessed externally by the nursing and health care communities? And not forgetting clients and patients who now through the World Wide Web have much greater access to published information, research, and accounts of the experience of care.”

• Differentiation 101
• The Long Tail (aka Good Enough!)
• Understanding these measures of quality will improve our position in the web space
Measures for quality of research and relevance to practice


Some of These include:

- Pose a significant, important question that can be investigated empirically and that contributes to the knowledge base
- Test questions that are linked to relevant theory
- Apply methods that best address the research questions of interest
- Base research on clear chains of inferential reasoning supported and justified by a complete coverage of the relevant literature
- Provide the necessary information to reproduce or replicate the study
- Ensure the study design, methods, and procedures are sufficiently transparent … (More available on the site)
Quality of research from departments and universities

- The RAE: Every active researcher in the UK University is assessed by a panel of other academics: an attempt to simplify the process and improve the efficiency of research funding.
  - Research income measures
  - Number of research active academic staff
  - Number of post-graduate students
  - (more available at RAE)
- The Star rating system
- Bush’s “Applied research only!” Ends justifies the means. So, The RAE is following an “applied like” trend
Relevance to knowledge, theory, practice or policy?

- Article growth is steady at 3% per year. But lots research and new forms of research means you need automation (manuscript mgmt)
- Resources that look at researching findings and provide guidance on the usefulness of these findings to clinical application:
  - Cochrane Collaboration, UK
  - Academic Center for Evidence-based Practice – University of Texas, USA
  - Centre for Evidence-based Nursing – Aotearoa, New Zealand
  - Evidenced Based Health Care – University of Barcelona, Spain
  - NICE – National Institute for Excellence - UK
  - Joanna Briggs Institute – Australia
  - McGill University Health Centre, Canada
  - RNAO: Nursing Best Practice Guidelines, Ontario, Canada
  - University of York, Centre for Evidence Based Nursing - UK
How does the peer review process help improve the quality of published material?

- CIBER (Center for Information Behavior and the Evaluation of Research – [www.ucl.ac.uk/ciber](http://www.ucl.ac.uk/ciber)). The Publishers Association (PA) the International Association of Scientific, Technical and Medical Publishers (STM) commissioned them to perform a survey of authors from all disciplines and geographic regions (5513 online interviews were completed (7.2% response)

- 77% agreed referees’ comments were valued
- 96% indicated peer review is a important in measuring the quality of what is published
- more findings from this important study later
Value and importance of peer review

Value of Peer Review

Importance of Peer Review System
How the peer review process helps (Continued)

- By providing a check-list/Measuring-stick quality can be assessed
- Here is a check-list against which Journal of Advanced Nursing and other Blackwell Journals assess their quality:

  ➢ The paper adds significantly to existing knowledge
  ➢ The literature review is comprehensive and up-to-date
  ➢ Recency of data (within last 5 years)
  ➢ The sample size is adequate and the response rate is high
  ➢ The paper has relevance to the readership wherever they are located (As discussed in Alison Tierney’s Session today as Editor-in-Chief of Journal of Advanced Nursing)
  ➢ The findings are discussed in relation to the literature
Opportunities to influence the quality of research and its relevance to practice?

**Authors:**

- Clear internal criteria for acceptance and rejection, with detailed feedback to authors on how to improve their work
- Direct authors to their supervisors for additional input into the writing of the article
- Have statisticians on the review panel as well as subject experts
- Host Writing for Publication workshops
Opportunities to influence the quality (Continued)

*Nursing Academics:*
- Encourage building on the current base of nursing knowledge and related subjects
- Encouraging Publication Planning as part of disseminating the results of the research.
- Lobbying university teachers and researchers' worldwide to educate nurses on research process

*Wider community:*
- **PR** Press releases to raise the awareness of the relevance of nursing research to practice (*As discussed in Diane Mason’s opening address*)

>>Research questions being posed: Consider the work of James Lind Alliance and other similar organisations
Opportunities to influence the quality  (Continued) Remember the Patients

- It was pointed out to me by one of my learned colleagues that the James Lind Alliance is identifying and confronting important uncertainties about the effects of treatment. Its remit is to consider addressing research questions that are of concern to patients and clinicians, and address their needs rather than simply continuing to meet the demands of industry and academia!

(www.lindalliance.org)
Measures of the quality of journals

• One might ask, “How do authors measure the quality of a journal: what do they rank has important?”
  
  Back to the CIBER study:
  
  ➢ Reputation of the journal
  ➢ Readership
  ➢ Impact factor
  ➢ Speed of publication
  ➢ Reputation of the Editor and editorial board
  ➢ Online manuscript submission system
  ➢ Print and electronic versions published

• The first two points are quite obvious. Let’s spend a bit of time focusing on **Quantitative Measures of quality** and specifically on the Impact factor, the ‘h’ factor and a word on usage/COUNTER-type measures
Impact factor

Cited Half Life

Underlying Data

Impact Factor

Immediacy Index

Citations in Year N, to journal articles published in N-1 and N-2, divided by the number of journal ‘source’ articles published in year N-1 and N-2
Impact factor

Limitations:
• Only citations from journals in ISI index – very limited within nursing, out of over 200 nursing journals, 29 are currently listed
• Not all article types counted as a ‘source’ item
• Calculated over a two year period
• Provides the impact for the journal and not for individual articles

Consequences:
• Not every citation to the journal is counted
• Not every article the journal publishes is counted
Impact factor (Example 1)

Number of times articles published in 2005 cited articles from the top 10 IF nursing journals
Impact factor (Example 2)

Compare the trend between a veterinary journal and a mathematical journal
<table>
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<th>5 year Impact Factor</th>
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<td>2</td>
<td>Nurs Res 1.528</td>
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<td>Res Nurs Health 1.077</td>
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<td>4</td>
<td>J Clin Nurs 1.027</td>
<td>Adv Nurs Sci 1.445</td>
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<td>10</td>
<td>Int J Nurs Stud 0.843</td>
<td>Nurs Sci Quart 0.772</td>
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</table>
Other measures

- The ‘h’ index
  - A scientist has index h if h of his/her \( N_p \) papers have at least h citations each, and the other \( (N_p - h) \) papers have fewer than h citations each

- The UKSG in March in association with COUNTER announced funding to explore a usage based ration – a “Usage Factor’ to be developed and then regularly calculated and disseminated.
Can you influence the impact factor (and other measures)

- Yes
- Remember to build on developing all factors which authors rate are important to them as IF is just one measure they consider when selecting a journal to publish in
- Place greater emphasis on the other measures provided by ISI such as immediacy and cited half-life values
- It must be remembered that it is the impact of the journal that is being measured the IF and not the impact of the individual papers that are being measured
- And with the majority of nursing journals not within ISI, there use other metrics to measure the quality and value of articles
- And this is where there has been a growth in the development of journal metrics which has been made possible with the electronic delivery of articles and the opportunities to link and track citations and also article downloads
Metric and bibliometric analysis

• **Metric Analysis** is 'a system of related measures that facilitates the quantification of the same particular characteristic.

• **Bibliometric Analysis** is 'a type of research method used in library and information science. It utilizes quantitative analysis and statistics to describe patterns of publication within a given field or body of literature. Researchers may use bibliometric methods of evaluation to determine the influence of a single writer, for example, or to describe the relationship between two or more writers or works.

• The most common data source for bibliometric analysis in this field is to use the Social Science Citation Index, The Science Citation Index or the Arts and Humanities Citation Index to trace citations.

Let's talk about citations
Did you know that Google uses a variation of this type of analysis when prioritizing search results in Google and Google Scholar?
Citations are good but don’t forget downloads!

Back to CIBER:

• 62% of authors think citations are a good measure of usefulness and 62% thought article downloads were are good measure of usefulness: So the new measure of downloads is getting more important. Some authors are already producing evidence of the citations and downloads they are receiving on their published work as part of their CV!

So what does this mean in the search space?
CIBER: How researchers find what they are looking for

Cited references is still critical however search engines are growing rapidly and the hard copy is all but losing out!
What search engines are there and building be ‘informative and friendly’ strategy

- Scopus
- Windows Live Academic Search
- Scirus
- Google
- Pubmed/Medline
- CINAHL
- ISI Web of Knowledge
- Publisher sites

What can you do with this information on search space?

- Allow your journal to be accessed by search engines
- The importance of paper titles, abstract structure, keywords, and taxonomies is critical for optimizing discovery
- Make sure references are linked to the source
- You should consider a SEO approach. Blackwell spends time enlarging abstracts, incorporating taxonomies, presenting articles servicing information at a machine layer and more…
- A strategy on how you will enable your content is essential!
Summary

• The quicker your process papers through the editorial office, and the quicker you publish, the earlier your papers are available to be cited. Being known is being differentiated in e-space.

• Analyse your journal’s own impact by looking at citations and article downloads.

• You are in a competitive space so learn about how the old world quality measures are evolving and learn the new quality measures as well.

• Create a process for incorporating quality measures into your strategic objectives for the journal.

• Take active steps has described here to improve the quality of your processes and educate yourself on the new influences of our journal article economy.
Any questions…?

Contact Griselda Campbell, Associate Director, for copy of presentation at Griselda.campbell@oxon.blackwellpublishing.com
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