Open Access Journals Quality – How to Measure It?

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• Open Access Journals quality importance
• Qualitative
  – Peer-review
• Quantitative
  – Citations based - Journal Impact Factor
  – Online citations based - Web Impact Factor
  – Usage based - Usage Impact Factor
  – Experimental indicators for OA
• Conclusion
There is still a lot to be done to associate OA and high quality. One of the way to achieve this goal is to introduce a objective and persuasive quality measurement of OA.
• Traditional;
• Open (BMJ);
• Open and permissive (Biology Direct);
• Community (Journal of Interactive Media in Education);
• Permissive, post-publication commentary (PloS ONE);
• No peer review, post-publication commentary

Peer-review

- Subjective
- Detailed
- Requires time
- Measures content
### Journal Impact Factor

Cites in 2003 to articles published in:
- 2002: 34
- 2001: 56

Number of articles published in:
- 2002: 27
- 2001: 29

Sum: 90

**Calculation:**
- Cites to recent articles: 90
- Number of recent articles: 56

\[
\frac{90}{56} = 1.607
\]

**Source:** Journal Citation Reports [online]. The Thomson Corporation, 2005 (http://scientific.thomsonreuters.com/media/scpdf/jcr4_sem_0305.pdf).
Journal Impact Factor

- May be manipulative
- May be misused
- Measures popularity and prestige (how often cited)
- High coverage of databases
- Objective
- Fast
Figure 2: Calculation for Web Impact Factor

\[
\text{WIF} = \frac{A}{D} = \text{Web Impact Factor}
\]

- \(A\) = total link pages (all inlink and self-link pages)
- \(D\) = number of web pages published in the web site which are indexed by the search engine, not all web pages available in the web site

Figure 3: Calculation for WIF revised to exclude self-links

\[
\text{R-WIF} = \frac{B}{D}
\]

- \(A\) = total links to a web site (all inlink and self-link pages)
- \(B\) = inlinks to the web site (this is a subset of \(A\))
- \(C\) = self-links and navigational links within the same web site
- \(D\) = number of web pages published in the web site which are indexed by the search engine, not all web pages available in the web site

Web Impact Factor

• Measures popularity and prestige in cyberspace (how often linked to certain page)
• May be manipulative
• May be misused
• Objective
• Fast
• Accurate for certain moment
Usage Impact Factor

\[
\text{UIF}_j^y = \frac{R^y(A_{j}^{y-1} \cup A_{j}^{y-2})}{|A_{j}^{y-1} \cup A_{j}^{y-2}|}
\]

Source: J. Bollen, H. van de Sompel, 
Usage Impact Factor

- Measures popularity, usefulness for academic community (how often read)
- May be manipulative
- May be misused
- Objective
Experimental OA indicators

1. Search engine Indicator $I_{se}$:

$$I_{se} = \frac{\text{Downloads by search engine access (Dse)}}{\text{Downloads total (Dtotal)}}$$

2. Backlink Indicator $I_{bl}$:

$$I_{bl} = \frac{\text{Downloads by backlink access (Dbl)}}{\text{Downloads total (Dtotal)}}$$

3. Direct access Indicator $I_{da}$:

$$I_{da} = \frac{\text{Downloads by direct access (Dda)}}{\text{Downloads total (Dtotal)}}$$

• Complete quality measurement should consist of: review (and commentaries), JIF, WIF, UIF (None of the factors should stand alone).

• The methods suitable for any kind of journal (not only OA)
Thank you for your attention!

Questions?

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