

Summary

The [Open Research, Impact, and Indicators](#) working group of the Open Science and Research Initiative (ATT) was established in September 2014 by the Ministry of Education and Culture, and was assigned the objective of assessing the changes that open science will have in the evaluation of the impact of research. Another goal was to review the significance of new assessment and measurement methods for open science and research. The primary task of the working group was to provide an international overview and to draft a proposal on which indicators should be introduced to monitor progress in open science and research, assess the impact of research, and promote the necessary accreditation mechanisms.

In its evaluation, the working group concluded that indicators measuring open access of publications can, under certain conditions, be developed and introduced even on a rapid schedule. The group viewed that the preconditions for their introduction are the creation of a reliable and sufficient knowledge base and a shared understanding among the different actors on how openness is to be defined. If the actors arrive at a shared understanding of the knowledge base and the definition of openness, the promotion of open access should be evident in the funding models of both universities and universities of applied sciences; its weight is to be agreed upon later, in practice with a weight coefficient linked to publications.

With respect to the openness of research data and new methods for assessing research (altmetrics), the working group concluded that the indicators and their knowledge base are not yet well-established enough to make it worthwhile to introduce benchmarks in steering research or assessing the utilisation, impact, and openness of research. Necessary prerequisites for further planning and possible introduction are additional assessments that can shed light on the whole. That said, indicators describing the direct use of research results were considered to be a potential new tool for assessing impact. Citations to open data as well as downloads and further development of open research software were deemed to be potentially important indicators of the impact of open science, whose use in assessing the impact of research should be investigated further.

Recommendations

The working group makes the following recommendations to the Ministry of Education and Culture and research organisations (universities, research institutes, etc.) on open access to publications and other research results as well as the introduction of new altmetrics indicators.

RECOMMENDATIONS: Measurement of open access to publications

To the Ministry of Education and Culture:

- Agreeing on the definition of open access to publications, improving the quality of the collected data and developing monitoring indicators for open access
- Reviewing the current state of open access on the basis of data collected on the publications of higher education institutions and the publication channel database of the Publication Forum
- Open access is to be included as an element in the funding model of both universities and universities of applied science by weighting open access publications with a separately agreed upon coefficient (e.g. 1.1 or 1.2)

To research organisations:

- Maintaining an institutional repository and developing the archiving process
- Improving the reliability and coverage of data on open access
- Utilising open access indicators in monitoring the development of open access to publications
- Researchers are recommended to self-archive their publications in their own organisation's institutional repository whenever possible

RECOMMENDATIONS: Open access to research data and software, and their measurement and altmetrics

To the Ministry of Education and Culture:

- Monitoring international indicator trends
- Developing a knowledge base for new indicators - for instance, collecting information on the amount of open-access data/software
- It is not yet recommended for use in science policy steering, as
 - The amount of data available is still limited
 - There is no clear unanimity of how to interpret indicators
 - No well-established indicators are currently available
 - The indicators could be subject to manipulation
 - The reliability and coverage of the indicators vary depending on, for instance, the field of science and language of publication

To research organisations:

- Indicator data (information on downloads of publications and research data, altmetrics, with datametrics to be introduced later) should be made available to researchers (such as the University of Helsinki's Terkko and the National Institute for Health and Welfare's Julkari) -> this increases researchers' motivation to grant open access to publications and research data and to disseminate them in different media

In addition, the working group proposes that the following definition of an Open Access publication would be used in the Ministry of Education and Culture's collection of data on publications and other national-level monitoring of Open Access publications:

PROPOSAL: Definition of an Open Access publication

- The publication can be read online in full and without restriction, printed out and copied at least for private use
- The publication is available either directly from the publisher's service or no later than after the end of an embargo period set by the publisher, through archiving in a repository dedicated to a specific organisation or field of science
- The publication is freely and persistently available from a service provided by either a publisher or other organisation that enables the harvesting of the metadata of publications and the indexing of them to other search services, and which supports citations and links to publications using URLs based on persistent identifiers (DOI, URN, Handle)
- The freely available version of the publication is, depending on the publication contract or publisher's policy, either the author's last self-archived published version or the final version published via the publisher's service