

6 Open Research as a Tool for Knowledge That Benefits Everyone

Alexandra-Cristina Ticea

The core idea of open research is the free-of-charge access to research results, methods, software, and also access to fellowships, state-of-the-art research facilities and equipment, open courses etc. The most tangible and prevalent form in which open research is objectified is probably represented by open access (OA) journals.

This subject has attracted extensive attention among the members of the academic and publishing communities, beginning with the release of the free online journal *Psychology* by Stevan Harnad [1]. The Internet has created tremendous opportunities, has contributed to information apprehension and exchange at a previously unimagined pace. Inherently, this aspect led to the concept of free and facile access to information and knowledge. Indeed, OA journals have constantly grown and improved along with the Internet and as of February 2018, the Directory of Open Access Journals (www.doaj.org) contained a total of 11,169 OA journal titles, belonging to virtually all academic fields.

The favourable evolution of OA publishing comes as a consequence of the fact that it rewards both authors and readers. Most scholars find that the most compelling reason to publish in OA journals is the free accessibility of the articles. This is quite easy to comprehend, since visibility is generally an important factor when deciding which journal to publish in. According to Davis et al., full-text downloads of OA articles are 89% higher, PDF downloads are 42% higher, and the number of unique visitors are 23% higher than those for subscription-based papers [2].

Moreover, a broader readership, increased findability and accessibility most often brings higher citation scores for a certain paper and hence, increased research impact. A parenthesis should however be made here. Citation rate and frequency are mostly increased by these factors for the meritorious articles, which bring relevant and original data to the scientific world [3]. In addition, OA publishing facilitates the transition to new citation metrics, such as the Relative Citation Ratio (RCR) [4] or Citex [5], which quantify the impact of individual articles rather than that of the journal. Since journal impact factors are poorly correlated with actual citations of individual articles, these new citation metrics are generally considered to be more relevant [6].

Another important advantage of publishing in OA journals is the fast publication times. In the era of speed that we live in, faster impact and faster access to

information is crucial. The too long publishing cycles in traditional print are obsolete and researchers are able to build on existing research more quickly. For instance, a statistical analysis performed on 2700 papers published in 135 journals listed in the Scopus citation index, showed that the time from acceptance to publication is considerably shorter for OA journals compared to non-OA journals [7].

Furthermore, most OA journals cross multiple disciplines, which leads to increased interdisciplinary conversation, wider research impact and greater visibility. These aspects eventually facilitate concerted research on a global scale, empowered through partnerships between academia, research institutions and other parties. This wider collaboration renders the establishment of extensive research frameworks possible.

OA journals make scientific content available to those who cannot access subscription-based articles, which implies greater public engagement. This aspect may bring in additional views with a positive note on research impact, funding opportunities and practical applications. Open research generates feedback loops, which is the case for every open system. If these feedback loops are properly maintained, they can offer useful insight, fruitful ideas and collaborations.

Over the past few years, open access has been regarded as a solution to the “serials crisis”. This crisis refers to the alarmingly increasing number of libraries that have been forced to cut journal subscriptions because of the unreasonably high prices involved for full online access to articles. It is self-evident that scientific results locked behind a paywall render the prospect of any progress limited to the privileged few.

OA journals offer researchers in developing countries and small or specialized research institutions access to the content/knowledge and the possibility of publishing. High impact non-open access journals may be biased against research performed in developing countries or by researchers who are not part of renowned scientific groups. OA journals, however, have a more open policy towards these scholars.

In an ideal society, scientists only concentrate on research, not resources. However, the lack of access to research facilities and state-of-the-art equipment for scientists from developing countries represents another important issue. Opening laboratory doors in highly developed countries, offering support and sharing experience to these researchers will most definitely represent an important boost towards the development of third-world countries’ research achievements. This might be, in turn, beneficial to societal development in these regions.

Therefore, there are compelling reasons to encourage open research in a global context. OA can become a tremendous tool of collective empowerment for

underdeveloped countries and of on-going accumulation of knowledge through research. Science and society stand to gain much if a sincere commitment is made towards creating and maintaining a real openness to all scientific results for any category of researchers, so that knowledge can easily spread and be built upon. This openness within science will unambiguously generate invaluable results that will bring about a more transparent, open and interactive society.

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