

35 Open Access: a Two-Way Path for the Underprivileged

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Most people around the globe live in underprivileged areas. In the world of science, this would mean that most global citizens have limited access to the literature and do not get updates to the latest research in the field. The paywalls to scientific journals restrict the amount of information because the subscription fees cost a lot of money. In these areas, the same amount can be used to hire a technical assistant or buy laboratory supplies, which are more fundamental to perform research. Though I do not mean that literature or the latest scientific articles in the field are negligible, obtaining a paid article is not entirely impossible. Talking from personal experience, when I get stuck at a paywall for an article which, after reading the abstract, would be essential for my research, I can ask my colleagues in some other institutes to download the full-text article. Of course, I cannot do it too often or for too many materials, due to my conscience.

We, as scientists, completely realize how crucial it is to publish our research article in a freely accessible journal. I believe that all of us have had the devastating experience of requiring a paid report, and how we like the feeling of getting all the articles we need. On the other hand, publishing in the free-access journals can cost quite a lot. Not to mention the public who may not include the journal subscription in their budget. Academic or research institutes need to carefully consider how they will spend the annual budget and make hard choices on several journals' subscriptions. Hence, open science may provide a solution to cater to the hunger of the scientific community and public society for highly-qualified research articles.

In the university where I am doing my doctoral studies now, we are encouraged to do open research. One of the reasons is to transparently give a freely-accessible research output to funding bodies and the public society. There are several options for how we can do that. As the first option, as much as we can, we should publish our research articles in a freely accessible journal. The idea behind open access journals is to divert the publication cost from readers to authors. Because the journals will not charge the readers, the costs to keep the journal running are then covered by the authors. Because the numbers of authors will most likely be less than the readers, the reviewing and publication fee can be high. I do not mean that publication in the free journals is more expensive than with publishers with a paywall,

but the researchers need to take this cost into consideration. Unless the researchers have included the publication fee in the grant application proposal, the budget limitation will restrict the options of journals available for selection. In that sense, researchers stuck between the necessities of the latest research update in the field and the institutes who cannot afford to pay all the publishers in the world need to contemplate how to get the best balance between the pricing factors and other scientifically favorable factors.

I like the idea of a second scenario to make this open science an answer to the desperate need of scientific field, without sacrificing the necessities of our host institutions. Regardless of whatever journals the researchers pick, they can self-archive the freely accessible version somewhere else. For this purpose, we can use the service of the university library, because the librarians have expertise in this area. Another exciting way to do it is by utilization of social media. With the flourishing usage of social media, including in the scientific community, authors can upload the accepted authors' manuscript, before the publisher's editing takes place, in their social media accounts after the embargo period.

Using such social media as a "free" means of open science, one scientist can network with the others both in similar or different areas. Due to the nature of social media itself, we can enlarge the networking scope from those we know or have met to those we did not have any connection to before. This network nonetheless will be valuable to foster future research collaborations with limitless possibilities of inter-disciplinary partnership one can expect. As all scientists aim for ground-breaking research, a sophisticated study employing multiple approaches and hence expertise in different fields is a challenge we would like to embrace. Thus, open science may also accelerate the generation of research itself, improve quality of a study, increase the number of publications, and hence enable faster completion of the research cycle than ever before.

For the stakeholders, such as the funding bodies, governments, or other regulatory organizations, easily accessible research provides them with more information for their decision-making processes. The funding bodies, who have supported the study would like to know how the support has been implemented to advance scientific discovery and benefit society. This information may also lay some foundation for the future studies they would like to support, aligned with their aims. At the same time, research outputs may also trigger governmental or other regulatory organizations to modify some regulations or to create the new ones that may solve some problems or benefit the public.

With all the excitement surrounding the idea of open science, the full implementation may take some time because not all of us are familiar with the related processes. Hence, witnessing the expected benefits would take even longer time, especially in fostering research collaborations. The public domain will firstly be showered with the overwhelming amount of information, which will hopefully sharpen critical thinking to assess and select which one they want to believe and apply in their daily life. In the less developed parts of the world, this challenge will hopefully change the delivery system of public education, which may also stimulate the progression of science and its application to ease their burden. In the end, all of us need science for a better life, right?



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