

23 The Effects of Open Research on the Scientific World

Afrina Mustari

1. Introduction

Open research or open science is the term that can be well expressed as the dispersion of scientific knowledge openly as soon as it is practical in the invention process. It involves making overall research materials, data and lab procedures freely available online to everybody. Open research clarifies research techniques, such as making transparent the data and tools used in the research process by making them openly available. Open research enables scientists to use the ideas of the best research around the world through the results, protocols, data and all aspects of the research in the desired fields. These handy findings will increase research reproducibility, and will create a favorable environment in the scientific world.

2. Importance of Open Research

2.1. *Benefits for Authors*

Open research which is published in open access articles are viewed more often in comparison to articles that are only available to subscribers, and increase the chance for citation. Increased attraction to the public and subsequent engagement can occur, especially for research in which there is a strong public interest. Open research helps researchers to build collaborative research on a global scale. Open research meets funder requirements as well as quality for special funds. It helps them obtain funds for the continuation of published research or to set up a new protocol. Practitioners can use the findings of open research. In some cases the research can even influence implementation of policy or laws.

2.2. *Benefits for the Articles*

Through opening the articles, journals can accelerate the process of getting impact. The increased visibility by researchers creates a positive attitude among them to publish their work in open access journals. Open research increases interdisciplinary conversation though allowing judging of novel approaches to traditional problems. By sorting new inventions, open research can accelerate the pace of scientific enquiry.

3. Constraints of Restricted Research

Many researchers suffer from a lack of access to research protocols. Especially in the developing countries, researchers experience trouble to subscribe or to pay access fees. The public will be unable to get access to the research. Only some reputed university and educational institutions have access to restricted research, where services are free at the point of use for staff and students in learning, teaching and research through institutional subscriptions. On the other hand, the majority of them can't support their young researchers to obtain their desired research protocols or data. So the restricted research ultimately limits the utilization of skills for many promising scientists, and access to new innovation processes.

4. Global Impact of Open Research

Now is the age of scientific revolution. Scientific fields are becoming closer to each other, leading to the discovery of new technology by overlapping different disciplines. Open research can be favorable in helping this approach. Nowadays researchers want to collaborate with other disciplines to utilize the best technology. Open science enhances the scope such opportunities. Today, scientific research relies more and more heavily on computer codes and software for simulations, analysis, calculations, visualization and signal or data processing, so it's important to have access to those codes and software. Moreover, it's essential to publish inventions so that the results can be repeated and validated. The said results also improve the transfer of knowledge from academia to industry. Many research institutes have potential researchers who can contribute to the scientific world but due to lack of proper knowledge about previous work in the similar discipline they can't obtain enough funds. Scientists from developing countries lack modern technology although they have a keen interest to make new discoveries. In this case, they can communicate with famous scientists through open research, thus engaging themselves in the innovation process. Sometimes scientists need to write a new research project, but if they can't get access to previous research it is quite tough to overview the writing. Practicing open science can improve research practices and increase study reliability. If scientists share their obtained materials and data, other scientists can more easily evaluate them, so it increases the quality of the research. By sharing their materials and data, scientists create scope for others to use and analyze them in new ways, potentially leading to new discoveries, thus speeding up scientific discovery.

5. Traditional Belief Lies behind Open Research

Researchers have been practicing closed science for years, even decades, and changing these old habits requires some more motivation. Some researchers think that others will steal their ideas and publish first if they disclose their findings. But these conventional habits need to be motivated to change to a more positive way. In fact, open research protects the researcher and restricts the chance of duplication. Open research makes scientists even more popular among the scientific community. If the researcher opens his technology a scientist from the same field may get involved in the different technology and ultimately this practice will reduce the duplication of effort and will be economically cost effective. On the other hand, with greater access to information through open research, more people working separately on the same problems can solve them more efficiently and with greatest transparency. In the present times, if the research remains closed it may lead to errors that are more difficult to highlight without full sharing of procedures, data and publications.



© 2018 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).