

How to move open science from the periphery to the centre

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Open science has been a feature of academia in Vietnam for more than a decade, along with open education which has been in place since the late 2000s. Since then, with the assistance of numerous bottom-up initiatives, open science has flourished and permeated a variety of academic fields in Vietnam. However, it is still positioned on the periphery and there are avenues that could be explored to promote it and move it to the centre.

Key statistics

Open science has been increasingly embraced by Vietnamese scholars. This trend is illustrated by the growing quantity and proportion of open access (OA) papers (co)authored by Vietnamese scholars over the past decade.

Scopus reports that, in 2011, just 25% of documents (co-authored by Vietnamese researchers) were open access (603 OA documents out of a total of 3,430 documents). These numbers have steadily climbed over recent years. In 2016 and 2021, the corresponding percentages are 33% (1,950 out of 5,893 papers) and 43% (7,875 out of 18,345 papers).

Open data, which has been acknowledged as an essential component of open science, has also attracted the attention of Vietnamese scholars. Since 2016, 92 data publications have been published in three major open data journals, including *Data in Brief* (Springer), *Data* (MDPI) and *Scientific Data* (Springer Nature).

Bottom-up initiatives

There have been a number of projects, primarily with a bottom-up approach, designed to promote the importance of open science among the academic sector and to increase public understanding of open science.

The Association of Vietnam's Universities and Colleges (AVUC) was one of the first organisations to actively promote open science and open education. Over the past 10 years, a team of open science and education experts at AVUC led by Le Trung Nghia has held over 100 training workshops and seminars to teach junior faculty members and librarians about the global movement toward open science and education and how to take advantage of it.

At the moment, AVUC is in charge of [a website](#) that focuses on sharing and promoting open science and open education to the wider community.

Another high-profile initiative is a research group at the Centre for Interdisciplinary Social Research at Phenikaa University in Hanoi, which has launched [an open database](#) on Vietnam's social scientists for public use.

In addition, the leader of this research group, Dr Vuong Quan-Hoang, has published a number of commentaries and essays in academic journals such as [Nature](#), [Learned Publishing](#) and [MDPI Publications](#) to discuss the Vietnamese perspective on open science.

In August 2022 Thanh Do University, a private university with its headquarters in Hanoi, joined the [Scholarly Publishing and Academic Resources Coalition](#) (SPARC), a well-known non-profit advocacy organisation that supports systems for research and education that are open by default and equitable by design.

Similarly, Thanh Do University [started an open resources initiative](#) with the goal of collecting 5,000 open books from other institutions, particularly those in North America.

In addition, a student handbook of open science and open education is scheduled to be published in 2022-23 with support from the European Association of Science Editors' Vietnam Chapter.

Obstacles

Despite early successes and bottom-up initiatives, there are still a number of barriers preventing the growth of open science in Vietnam.

First, policy-makers and other governing authorities don't know much about it. Vietnam's Ministry of Science and Technology organised the country's first ever [national conference on open science](#) in October 2021 in conjunction with UNESCO.

Nevertheless, open science is still not included in any national goals or plans for research and technology. Article processing charges (APCs) are still not allowable as an expense item for nearly all national research grants. This implies that authors who wish to have their works published in open access journals must use their own funds to cover APCs.

Second, some influential professors and scientists still have a negative attitude towards open access publications in certain academic disciplines, especially in natural sciences and mathematics. They view open access journals as being of inferior quality and even predatory. Due to this, many junior scientists – even those who support open science – fear publishing in open access journals.

Room for development

From a global perspective, it is unnecessary to reiterate the numerous advantages of open science, which range from increased access to knowledge to better collaboration. Indeed, developing nations such as Vietnam may even gain more from this movement than developed nations.

Nonetheless, it is a conundrum that developing nations suffer bigger entry obstacles to open science than developed nations. To relocate open science from the periphery to the centre of Vietnam's academic landscape, both bottom-up and top-down efforts are required.

Recent developments in Vietnam's university accreditation mechanism have created opportunities for open science in Vietnam. Although the new accreditation mechanism, issued

by the Ministry of Education and Training in 2017, does not directly address open science, it places an emphasis on the role of academic resources and the materials used for teaching, learning and research activities.

For the further advancement of open science in Vietnam, I urge policy-makers and higher education leaders to implement the following actions:

- Open science should be at the heart of the next national and institutional science and technology plans and agendas with specific targets.
- Infrastructures for open science, such as an open database and open journals should be established at a national level.
- Research grants should include APCs as a legitimate expense item.
- It should be mandatory to promote open science to students and junior faculty members.
- Open science should be incorporated into the formal curriculum and syllabus of undergraduate and graduate courses.

Given the limited financial resources of most universities in Vietnam, using open science and open education should be seen as an appropriate measure to help the country's universities meet the requirements of the national accreditation system and to boost Vietnam's research capacity and knowledge base.

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