

Framework for  
Open and  
Reproducible  
Research Training



FORRT

*Letter to UNESCO's Principles of Open Science Monitoring  
November, 26th 2024*

Dear Open Science Monitoring Initiative,

After reviewing the Draft Principles of Open Science Monitoring by the UNESCO Working Group on Open Science Monitoring, we held (informal) consultations with our community and partner organizations. We have identified areas of concern that require your careful attention to ensure these principles genuinely reflect the values of inclusivity, equity, and ethical responsibility as per UNESCO's approach to Open Science, which emphasizes "making science more accessible, inclusive, and equitable for the benefit of all." We are concerned that the current draft does not fully align with UNESCO's own definition and approach to Open Science. The UNESCO Recommendation on Open Science highlights the importance of inclusivity, equitable access to scientific knowledge, and the democratization of the scientific process. We would like to signal that we believe the current draft can do a lot more not to be short of thoroughly integrating and operationalizing these values.

We acknowledge the necessity for high-level principles and pragmatism, as mentioned in the current draft. However, the text lacks explicit detail on how the monitoring principles of Open Science will incorporate and uphold UNESCO's foundational ideas. The metric-focused approach of the current iteration of the principles focuses on responsibly monitoring the outputs of open research practices rather than the potential outcomes of an evolving open knowledge landscape. The principles provide no insight into addressing the recognized difficulty of monitoring impact, culture change, and value across highly heterogeneous contexts. This omission is not merely a theoretical oversight but

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has the potential to cause significant harm by perpetuating existing inequities and excluding marginalized groups from the benefits of Open Science.

Currently, indicators used for assessing open research practices are poor in accounting for the variability of research contexts worldwide. They do not reflect that the infrastructures supporting Open Science cope poorly with factors necessary for global inclusion, such as multilingualism, multi-cultural ontologies, and the historical legacy of colonialism. As a result, they fail to account for regional variations in open research practices due to socio-political factors. Far more is needed to better account for the diverse academic domains, social contexts, and languages to avoid marginalizing certain groups or regions. We recommend that the development and adoption of these indicators include voices from underrepresented regions and communities to ensure a genuinely global perspective.

Failure to develop indicators that account for why open research practices are being adopted, in addition to what is being done, runs the risk of perpetuating marginalizations and stereotyping of knowledge communities worldwide. We suggest that principles for open science monitoring should strive to have explicit mechanisms to avoid harm and unintended consequences—especially for marginalized groups and researchers in low- and middle-income countries. We strongly recommend that the principles for monitoring be accompanied by principles for data visualization. These principles would outline commitments to recognizing bias, providing explanations for missing data, and contextualizing data to offer meaningful reflections on socio-political factors.

Monitoring should not lead to harmful practices such as excessive surveillance, undue pressure on researchers, or inequitable rankings. Monitoring should incentivize positive practices rather than punish or rank individuals or institutions. Continuous assessment of the impact of monitoring activities is crucial to mitigate any negative consequences. Similarly, indicators and monitoring tools should be sensitive to cultural differences and relevant to specific contexts. Developing context-specific indicators and involving local experts in their creation is necessary to ensure cultural sensitivity and relevance.

We also want to point out that static indicators may not keep pace with the evolving nature of science and society, potentially leading to outdated or irrelevant monitoring practices. Establishing processes for continuous evaluation, updating of indicators, and explicit efforts toward consulting with marginalized communities is vital to reflect current realities and emerging challenges.

We have noted with concern that the current draft does not address several key elements essential for the comprehensive adoption of Open Science principles. Specifically, there is a notable absence of emphasis on the traction toward open education practices, the integration of Open Science into higher education (and beyond), and the promotion of open educational resources, participatory research, and grassroots initiatives. These elements are crucial as they significantly contribute to the democratization of knowledge, making scientific research more accessible and beneficial to a wider audience. Open educational resources and practices enhance transparency and reproducibility, providing educators and learners with free and adaptable materials that can be tailored to diverse educational contexts. Furthermore, participatory research and grassroots initiatives are vital for bridging the gap between scientific research and societal needs, ensuring that diverse communities can engage with, contribute to, and benefit from scientific advancements.

Incorporating these components into the principles would better align with UNESCO's vision of inclusive and equitable access to scientific knowledge, thereby enhancing the impact and sustainability of Open Science initiatives globally. Moreover, better alignment with other key UNESCO and UN areas of activity will enrich Open Science monitoring discussions. These include the UNESCO Recommendation on Open Educational Resources (OER), the UNESCO International Decade of Sciences for Sustainable Development, UNESCO Local and Indigenous Knowledge Systems, the UN Pact for the Future, the Global Digital Compact, and the Declaration on Future Generations.

Therefore, we urge a revision of the current draft to include detailed, actionable steps that reflect UNESCO's Open Science values. This would align the principles more closely with UNESCO's vision and foster a more just and inclusive global research ecosystem. Indeed, it is only through diverse and equitable monitoring strategies that the UNESCO Recommendation can achieve its full potential.

We appreciate your attention to these significant issues and are eager to engage further to help refine these principles.

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