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Expanding Earth Science to Include Indigenous Knowledges

My focus as a secondary science teacher before starting my PhD program was always to find relevant, anchoring events to connect my students with the science. This often meant straying outside of what many consider to be official “science.” I brought in social issues, economics, politics and other disciplines. From my understanding, this organization is designing curriculum of this nature, which is what draws me to your work.

Although I continue to believe in that type of teaching today, in addition I am now pushing to expand the boundaries of “science” to make sure we are considering, including and valuing the knowledge of people who know the world through a different lens. Scientists have often devalued the knowledge of people who are not academically trained and excluded their experiences from conversations on how to solve some of the world’s most serious problems. In order to build sustainable societies, we must humble ourselves and recognize that we do not have all the answers; that science and technology has caused harm to others in the past, and continues to do so today.

To that end, my “innovative idea” focuses on including the voices and knowledges of First Nations people in our programs and our curricula. Their knowledge of the land, its inhabitants and its history is critical to our collective understanding of creating a more sustainable world. I think we should make sure that this organization builds authentic relationships with First Nations people in each locality and brings them into true partnerships. We do not just want to “use” information gained from First Nations people, but to exchange, collaborate, support and collectively work to solve the problems the world faces. Improving representation of Native voices (as with all under-represented groups) in the formal sciences is part of this as it will bring new questions, new interpretations of data and new ways to apply what we learn. But there is also knowledge within “non-scientific” communities we can partner with to teach, to study, to build, to restore and to repair. It will take time to build trust and begin to share knowledge in a generative way, but many groups have already begun to do so. We can leverage that work and create new, transformative, social justice-oriented curriculum units and more sustainable societies that benefit all people. As a group focused on Earth Education, we should work with those whose stolen land we live and work on; I believe we can find common purpose through collaboration.

Recommended readings:

Bang, M., Warren, B., Rosebery, A. S., & Medin, D. (2012). Desettling expectations in science education. *Human Development*, 55(5–6), 302–318. <https://doi.org/10.1159/000345322>

Turnbull, D. (1997). Reframing science and other local knowledge traditions. *Futures*, 29(6), 551–562. [https://doi.org/10.1016/S0016-3287\(97\)00030-X](https://doi.org/10.1016/S0016-3287(97)00030-X)