

UNESCO Chairs / UNITWIN Networks Policy Brief Template

Under the UNESCO World Higher Education Conference ([WHEC2022](#))

[Section for Higher Education](#) | Division for Education 2030

Type: Individual | Collective

Indigenous Perspectives on Open Science and the Decolonization of Knowledge

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Date 05/03/2022

Abstract

This policy brief on Indigenous Perspectives on Open Science and the Decolonization of Knowledge is a contribution to WHEC 22 theme three on Inclusion on Higher Education. It is the product of The World Virtual Indigenous Circle on Open Science and the Decolonization of Knowledge which took place on November 12, 2020. It was organized by the UNESCO Chair in Community-Based Research and Social Responsibility in Higher Education, co-hosted by the Canadian Commission for UNESCO and the World Indigenous Nations Higher Education Consortium, and the format was designed by Lorna Wanósts'a7 Williams. The Circle featured nearly 20 Indigenous speakers and attracted some 300 registrants from around the world. Its purpose was to inform UNESCO's drafting of a recommendation on open science and, in turn, to ensure Indigenous knowledge is incorporated respectfully and with integrity to help reshape how higher education institutions recognize and use it. The aim of this brief is to share our recommendations on the next of many steps toward ensuring that Indigenous knowledge is better recognized worldwide, so it can guide individuals and institutions in higher education, in research, and in protecting the Earth.

Policy recommendations for Higher Education Institutions:

- Acknowledgement of Indigenous Knowledge as science
- Recognition of Indigenous spiritual practices as vital to guide and inform Indigenous Knowledge
- Support the revitalization of Indigenous cultures and languages, recognizing that they are integral to Indigenous Knowledge
- Work towards an understanding of science that prioritizes relationality – relationships with people, community, land and all Creation
- Recognize an Indigenous conception of time that ensures longevity of relationships and sustainability for future generations

UNESCO Chair: Community-Based Research and Social Responsibility in Higher Education

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Introduction

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Despite its virtual format, the webinar adhered to Indigenous protocols, opening and closing with prayers, songs and territorial welcomes from respected Elders and Knowledge Keepers. The format emulated a Talking Circle that encourages respect, information sharing, attentiveness and interconnectedness. Speakers and attendees expressed their recognition that the webinar marked a time for Indigenous people to revisit who and where they are, who their ancestors are, and where their teachings come from to move forward in a positive way. As Dr. Lorna Williams phrased it in her opening remarks, "We have gathered today in a circle and we are here to shape what's in the middle: the bundle of knowledge that will guide the way in which Indigenous peoples' knowledge is continued and created from all over the world."

1. Why this policy conversation is needed

Dr. Lorna Wanósts'a7 Williams

Lil'wat First Nation, Professor Emerita, University of Victoria

We are sharing this policy document with you in words which come from our circle. Our circle has been shaped to name the bundle of knowledge that will guide the way in which Indigenous peoples' knowledge is continued and created from all over the world. Our knowledge systems, our languages, our identities have been under assault for generations and generations. And it was in a prophecy that the time would come when we would join together to ensure that our knowledges would continue. As Indigenous People, we have been working with our ancestors and with the lands, with all our relatives so our knowledge systems continue to be used and known and to be gifted by us to our descendants. We're here to add our knowledges to the world.

Each of the words shared in this policy brief helps to shape what inclusion of Indigenous knowledge looks like in the context of higher education and beyond. We share so that that knowledge is used in a respectful way—and so that it doesn't become distorted, that it's honest and full of integrity; so that it's protected, but it is a part of the world. We're coming out from the shadows. Each of these words will add and shape that knowledge so it can be remembered, and so it can be a guide for all of us continuing forward in education and in research, in studies and in the reshaping of institutions to protect and to uphold our mother, the Earth, our father, the Sun and all of our relatives.

1.1 Key Messages

Although each webinar participant brought a unique perspective—connecting Indigenous knowledge to political activism, the importance of storytelling and cross-cultural dialogue, the global class struggle, the intersection of Indigenous language and mental health care, and more—some central themes emerged:

- The knowledge that Indigenous people accumulated for thousands of years before the emergence of “civilization” is not only valuable, but necessary for the continued existence of humans on Earth. Science can no longer ignore the wisdom that comes from Indigenous knowledge systems that have been around since time immemorial and can benefit future generations.
- The Earth is facing a crisis. The broader scientific community can help to address this crisis and restore equilibrium by supporting Indigenous scientific communities. A central goal of Indigenous knowledge is sustainability, and it is built on relationships rather than on what can be measured.
- Western science is linked to money. Indigenous science is about love of land. The continuity of Indigenous science is therefore linked to the continuity of life on Earth.
- Indigenous people around the world will explain science in different ways and emphasize different aspects, but all operate from the same paradigm and share a way of understanding themselves in the world, including how they come to knowledge and self-understanding.
- Indigenous language and knowledge are intertwined, and both are at the heart of cultural survival and identity. A reinvigoration of Indigenous languages and cultures can help Indigenous populations reclaim space, dignity, equality, justice and liberty.
- Despite long traditions of Indigenous science that are now being appreciated and reimplemented, the practice of Western science has systemically excluded Indigenous thought, Indigenous ways of knowing and Indigenous peoples. Western knowledge and its proponents continue to seek to privilege it over other forms and origins of knowledge, both in mainstream media and in formal education.
- Indigenous knowledge can help communities to regain autonomy and self-governance by improving cross-cultural dialogue.
- The effects of colonization are alive and well in many of the world’s Indigenous communities. The starting point for decolonizing knowledge is to colonize countries, nations, peoples and their languages.

1.2 Central discussion points

Indigenous Peoples in many parts of the world have experienced what one webinar participant termed “the long assault”: a 500-year-long attack on their territories, cultures, languages and knowledges. This systematic move to silence and devalue Indigenous perspectives can be seen as a form of intellectual colonization.

Today we are engaged in the work of educating people that Indigenous knowledge has value and that considering other knowledges does not jeopardize their own. It is an effort to appreciate that the Indigenous knowledge that people continue to hold is precious and to recognize that it has continued despite a centuries-long effort to silence it.

Indigenous scholars and activists around the world have diverse languages, cultures and histories, but they take strength from important commonalities that emerge in their epistemologies. They agree on the importance of decolonizing knowledge and establishing a

shared infrastructure to support the re-emergence of and renewed respect for their languages and knowledges.

This importance of this work is gaining recognition among Canadian pillars and funders of research, such as the tri-agency composed of the Canadian Institutes of Health Research, the Social Sciences and Humanities Research Council, and the Natural Sciences and Engineering Research Council.

Speakers agreed that language is an essential starting point for reasserting the value and application of Indigenous knowledge, as they are indivisible. They agreed that the richness of Indigenous knowledge systems arises from an intimate tradition of knowing and caring for the land and relationships, with a focus on continuity, and that it is time for these traditions to be brought into the mainstream and given the same serious consideration as “western” knowledge.

Some speakers touched upon the intersection of western and Indigenous knowledges, drawing attention to the value that can be derived from bringing traditional knowledge into universities and having Indigenous institutions work alongside western ones. These ideas are connected to the need to ensure access to quality education for Indigenous people everywhere and to ensure Indigenous ways of knowing are incorporated into educational institutions so they can be considered universal rather than western. That said, mainstream agencies must be pushed to reflect on the need to develop an ethical space from which to frame a relationship between themselves (and the state) and Indigenous peoples.

Many presenters spoke of the persistence of colonization or its effects in their communities in physical, linguistic, economic and cultural domains. All spoke about the daily challenges of pushing back to hold space in their minds to engage in the important work of cultural survival and to remain involved in supporting cultural reclamation.

We are aware of the struggles involved in bringing Indigenous languages into the light. The reclamation and use of language and the participation of people in Indigenous cultural work is in itself a political act. As Kevin Lowe phrased it in his summation of the webinar: “We need to never forget that the ongoing work of the neo-colonial state has been to deny prior occupation, sovereignty and intimate connectedness between Indigenous People, their country and knowledge systems.”

2.0 Perspectives from Indigenous knowledge keepers

2.1 The Foundations of Science

Dr. Leroy Little Bear

Blackfoot First Nation, Professor Emeritus, University of Lethbridge, Canada

There are three major areas of science: the science of being (the cosmos), the science of the local (Newtonian physics, our everyday reality), and the science of the small (the subatomic world). But what is science? It is a search for reality.

In Western thought, it's "been there, done that, let's move on to something new." In Blackfoot thought, everything is related to place—it's space-oriented. Why? Because although land will change, it changes slowly. So place is something we can hang our hats on, at least for a time. That's why land is sacred.

Blackfoot science is about energy, and it's galactically, cosmically based. It looks at the big picture. That's why we have star stories and medicinal wheels. The Blackfoot paradigm is based on constant flux, energy waves, spirit and relationships, whereas western science is about matter, the inanimate, measurement and reductionism.

The goal of Blackfoot science is to sustain our existence, whereas Western science is about measurement. From a Blackfoot perspective, if it's not about relationships, it's not science.

"Let me very quickly compare science to a house. A house usually has a foundation and then a floor plan. And once you've got the floor plan, then you can think about decorating, furnishing and so on. A lot of times when we're talking about science, we end up talking at the furnishing level, not so much at the floor plan level, and even less so at the foundational level. I want to talk about the foundational level."

2.2 Integrating western and Indigenous science

Dr. Gregory Cajete

Tewa, Santa Clara Pueblo, Professor, University of New Mexico, U.S.

"These criticisms have to be brought forward in ways that allow us to build bridges toward a better future for our students, ourselves and our communities. We do need science to sustain ourselves into the 21st century in all areas. And we do need more Native students in science-related fields. Hopefully, with these kinds of strategies, we will be able to accomplish more rapidly within the next decade."

What I want to emphasize in my time here today are the major issues that I see with regard to Native science and its integration with Western science—in the way Indigenous peoples view and understand themselves in the world, what we call epistemology, how we come to knowledge, how we come to understand ourselves. That is very much in contrast with Western ways of knowing, education, forms of research, economics, politics. This forum is tackling a very important issue in the sense that we're beginning to put in place an infrastructure for thinking about this.

This is what I've been doing since 1974, when I first started teaching science. Even before the term decolonized was being used, I started a decolonized science curriculum initiative at the Institute of American Indian Arts, combining science with students' cultural histories. I was teaching with Native science and Native knowledge, weaving them together using the arts, creative writing and the abilities of our talented students to describe their thoughts and perspectives in ways that reflected them as contemporary people.

Dr. Rayna Green, a Cherokee who was head of cultural knowledge and perspectives in the American Association for the Advancement of Science in the late 1970s and early 1980s, said: "The lack of Indian participation in science is as much due to an alienation from the traditions of Western science as from a lack of success or access to science education, bad training in science or any other reasons conventionally given for minority exclusion from science

professionalism. Contrary to the insistence of Western scientists that science is not culture bound, that it produces good, is that many Native people feel that science and scientists are thoroughly Western rather than universal, and that science is negative."

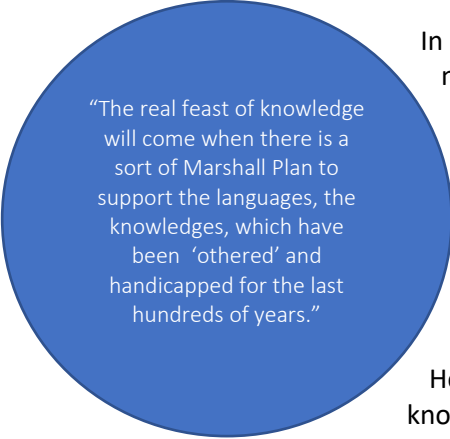
Much of that, unfortunately, is still true. It's a kind of intellectual colonization that I think we need to take a serious look at because it's the systemic exclusion of Indigenous thought, Indigenous ways of knowing and Indigenous peoples from the practice of science even though we have long traditions of science that we are now beginning to rediscover and reimplement.

2.3 Decolonization of people and language

Prof. Wangoola Wangoola Nduwala

Nabyama, MPAMBO African Multiversity, Busoga, Uganda

I speak from a background where we experience bareknuckle colonialism and oppression. I will address the issue of knowledge: where and what are the sources of knowledge?



"The real feast of knowledge will come when there is a sort of Marshall Plan to support the languages, the knowledges, which have been 'othered' and handicapped for the last hundreds of years."

In our experience, they are institutions like family, neighbourhood and community engagement in the production of requirements of material sustenance. They are an education system. (But in our case, a lot of missed education.) Other sources of knowledge struggle in countries where a small set of people oppresses the rest. There is also the global class struggle. And lastly, the struggle between countries, where a small set of countries oppresses the rest. All of this makes decolonization an issue.

Hence the talk of what is called mainstream or conventional knowledge in our country. We are weary of talking about knowledge in terms of compass directions—Western knowledge, for example. Indian knowledge, African knowledge, Chinese knowledge. I think we need to start being consistent by calling a spade a spade. If we talk about Chinese knowledge, African knowledge, Indian knowledge, then we should not be talking about Western knowledge. We should be consistent and call it European knowledge.

Instead of using the euphemism of Western knowledge, we should try to categorize knowledge and worldviews between dominative or hegemonic knowledge and knowledge that seeks to coexist with other knowledges. But in Africa, we generally find that it is not possible to decolonize knowledge when the people are colonized. The point is that first and foremost, you need to decolonize countries, nations, peoples and their languages. Colonized people cannot have a decolonized knowledge.

2.4 Building trust to support cross-cultural dialogue and self-governance

Dr. Zanisah Man

Orang Asli, Professor, Universiti Kebangsaan, Malaysia

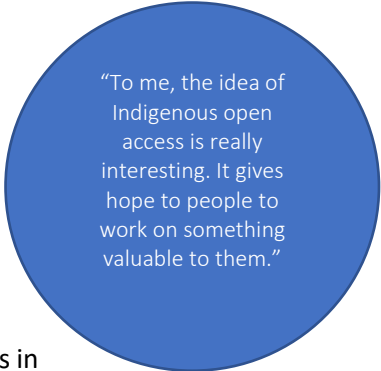
I am interested in the Indigenous relationship to land through the lens of community notions of territory and space.

For the Jakun (Indigenous) community that I work with, the goal is to regain knowledge, autonomy and self-governance. The problem is that it is not easy to achieve self-government

when the community cannot express who they are or have face-to-face communication with outsiders.

In that context, cross-cultural dialogue and collaboration are essential. Yet there are many challenges involved in getting a community to trust you—and trust is extremely important. For example, when I met the Jakun community for the first time in 1990, I assumed that as an Indigenous person, they would accept me. But they did not. They only accepted me because my friend was a Malay (Indigenous).

I'm now working on a project that involves translating Indigenous stories from the Jakuns of Malaysia and the Bribri of Costa Rica. The communities wrote their own stories. I translated them from English to Malay. When I work with the Jakun community, I have to convince them to put their stories in writing, and then I have to translate it. I have to work with the children to convince them of the importance of turning imaginary stories into pictures. I have worked with this Jakun community since 2003, so I built that trust.




“To me, the idea of Indigenous open access is really interesting. It gives hope to people to work on something valuable to them.”

2.5 Using the study of language and culture to reclaim space

Dr. Sonajharia Minz

Vice-Chancellor, Sido Kanhu Murmu University, Dumka, India

I come from an Oraon tribe in India and am second-generation literate. About five months ago, I was selected to be the head of this university in the tribal heartland of India. It is a liberal science and arts university.



“The term sustainability can only be understood, at least in India, in terms of how the Indigenous populations have continued to live.”

It is said that in India, there are over 700 distinct tribes whose population numbers about 105 million among India's total population of more than 1.3 billion. Along with the dividing line here between the Indigenous and the non-Indigenous, we have multiple other layers in Indian society. In terms of colonization or decolonization, we have had almost an onslaught of the mainstreaming of knowledge systems and society, even prior to the British colonization.

The teaching, learning of tribal languages in central India started in the mid-1970s. But the study of Indigenous People in India has not gone beyond the study of anthropology or language in a compartmental manner. And there has rarely been any genuine effort to study the culture of Indigenous peoples in India.

Now that I have the opportunity to head a liberal arts and science university, I am making efforts to start language and culture study programs. These programs are an effort by Indigenous populations to claim space, claim dignity and also thereafter try to claim what our constitution also tries to promise: equality, justice, fraternity and liberty. It's so very important to bring out the richness of the Indigenous (or as it is called in India, tribal) knowledge systems and share what has been kept in the margins—and even outside the margins—for thousands and thousands of years.


2.6 Knowledge and language as a source of strength

Jazmin Romero Epiayu
Wayuu Activist, Colombia

Translation provided by Andrés Mejía

I have been an activist and feminist for many years. I defend Mother Nature and struggle for the rights of Wayuu women, especially girls and adolescents. Today, I want to talk today about the importance of preserving ancestral knowledges and languages and about what we are doing to gather strength to struggle for the survival of our peoples.

My focus is on defending our territories and the rights of women. The Wayuu community has also started to create some alliances with some other peoples to gain strength. We are creating a great spiritual pact for the defense of the territory. We want to safeguard and clean up our territories and recover them from the capitalist system and liberalism. We want to do this so we can look for strength from our ancestors and retake spirituality as a central force.



“When we talk about spirituality, we talk about equilibrium. We talk about saving the planet, because the planet right now is in a crisis. This ancestral scientific community deserves support from the broader scientific community. I consider myself to be a scientific researcher because I am researching my own ancestral knowledge for the purpose of defending Mother Earth.”

Our territories are in the Sierra Nevada de Santa Marta. We joined together there to create a great pact. Now, we must do it again in another mountain range, Serranía de Macuira, a sacred site for the Wayuu people. We will go there to invoke the spirits and seek guidance about how to better safeguard our territories, which are now mainly in the hands of multinational corporations.

I would like to share this project so everybody can have access to it and see it. I also call upon the scientific community and UNESCO to join in this project to save the richness of my ancestral peoples, who are at risk.

2.7 Returning to language to restore health and wellness

Dr. Ed Connors

Kahnawake First Nation, Psychologist, Canada

I come from Kahnawake Mohawk territory—where my mother was born and raised—and from the Town of Mount Royal, which is part of Montreal. A river divides these communities, but a bridge also connects them. So I come from two sides of the same river—or in fact, two world views. I've learned to respect both, not only in terms of sustaining my life, but in understanding how to promote and support life on Earth.

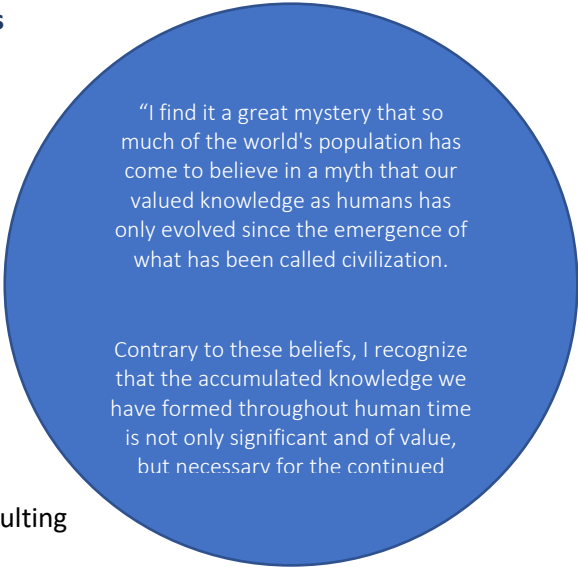
When I left the Tower of Higher Knowledge, I chose to go out to learn from territories across what is now called Canada. I sat in the lodges of my ancestors and Elders to understand more about what we need to know to survive in the face of the difficulties resulting from colonization.

Since then, I and my Indigenous colleagues are resurfacing our Indigenous knowledge in health care, justice and suicide prevention. Years ago, trying to understand suicide better, we relied upon so-called European knowledge. But we came to realize that we needed to return to the knowledge that exists within our languages. We began to speak about how we could understand suicide within the Anishinaabe language. We began to rethink our approach to prevention by thinking about it through an Anishinaabe lens or worldview.

We began to redefine “Mino-bimaadiziwin,” or living the good life. Through Indigenous knowledge and teachings, we now encourage others to explore with us how we can support each other to live long and good lives and avoid premature, unnatural death.

This shift in thinking has created a dialogue within our Indigenous communities and within health-care systems. It is shifting the paradigm from suicide prevention to a focus on supporting long and good lives. This process of translating our Indigenous ancestral knowledge is informing much of what is helping our Indigenous communities to restore health and wellness and therefore to survive.

You can learn more about what we are doing by visiting our website, wisepractices.ca.



“I find it a great mystery that so much of the world's population has come to believe in a myth that our valued knowledge as humans has only evolved since the emergence of what has been called civilization.

Contrary to these beliefs, I recognize that the accumulated knowledge we have formed throughout human time is not only significant and of value, but necessary for the continued

2.8 Building a future for the world by honouring Indigenous voices and ideas

Dr. Manulani Aluli Meyer

University of Hawaii, West O’ahu, U.S.

Aloha to all of you. What a blessing to have so many cousins in the house.


Aloha 'Āina is the love of land. When you have Aloha 'Āina at the centre of science, you're not wondering if the bottom line is money for investors. Do you understand that science is linked to money? We love our lands here. And it is more than that. Aloha 'Āina is that which nourishes us, that has always loved us.

In the 1970s, we created a renaissance because research is renewal. We were renewing ourselves to relationality, dynamic coherence, interdependence, mutual causality, and what the post-quantum sciences are calling complementarity. Isn't that beautiful? We are heading into the rise of the feminine, the rise of the actualization of a kind of wisdom based on Aloha 'Āina.

The ultimate sciences of the western world are called post-quantum world complementarity. Here, we have that in concepts. This is a form of simultaneity that isn't about reciprocity. It's about consciousness.

And when that consciousness is about serving people, that's a spiritual energy that builds a mutual emergent future for the world. Mutual emergence isn't about one culture over the other. Specification leads to liberality. And that's the localization of knowledge. That is the honouring of our Native voices, our Native ideas.

And when our principles become the centre of our "new" science, there's nothing "new." We have relationality. We will understand when our subjectivity changes things. We're not going to hide behind the false veil of objectivity. The maturity of the world is on fire.



"Leroy, I remember a talk you gave where I said something stupid like, "Land is a metaphor for our mother." And you scolded me and said, 'Land is not a metaphor for our mother, land *is* our mother.' That changed everything for me. Indigenous epistemology is about continuity.

"And in that centre of continuity is love. We call it aloha here in Hawaii. And it's not a commodity. It is an energetic field of purpose, shared meaning, passion and commitment to the love of land and the service of people."

Policy recommendations for Higher Education Institutions

- Acknowledgement of Indigenous Knowledge as science
- Recognition of Indigenous spiritual practices as vital to guide and inform Indigenous Knowledge
- Support the revitalization of Indigenous cultures and languages, recognizing that they are integral to Indigenous Knowledge
- Work towards an understanding of science that prioritizes relationality – relationships with people, community, land and all Creation
- Recognize an Indigenous conception of time that ensures longevity of relationships and sustainability for future generations

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Annex

Annex 1

Contributors to this policy document

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