Why is it important to consider Native ways of thinking about science in science curriculum and instruction, even without many (or any) Native students in your classroom?

Jason Dropik, Indian Community School

As science seeks to solve problems and answer questions about the world around us, whose world does science curriculum acknowledge? Whether you have Native students or not, considering a native perspective and contributions to science is essential for all students. The world is increasingly diverse and that will continue moving forward, how do we prepare students and our communities to be thoughtful, empathetic, partners with "All standards, all students" (NGSS, 2013)? In a country that has 573 tribal nations, ignoring those ways of being and knowing perpetuates continued practices of subjugation and termination. "In considering what would constitute a curriculum and an approach to instruction that is valid for a given cultural group, we must first consider the customary ways of knowing and acquiring knowledge of that group. We are faced with essential epistemological questions such as, "What counts as important knowledge or knowing?, " What counts as evidence for claiming something to be true?," and "How and when should knowledge or understanding be expressed or shared?".....A blanket approach to students that fails to take sociocultural factors into consideration is not likely to succeed in reaching all students." (Neslon-Barber and Estrin, 1995). Considering native perspectives creates not a seeking of knowledge, but a way of seeking to understand the relationships that exist in science as interconnected, personal to all who experience it, and connected to not just the physical, but a spiritual connection. This spiritual connection creates a greater connection to learning, problem-solving, advocating, understanding, and empathy for ALL students. Preparing all students to be reflective, inclusive, and supportive of others views without judgment will enhance collaboration, understanding, and discovery.

Dr. Mark Powless, Indian Community School

There is more than one route to the systematic study of phenomenon through observing and experimentation. Learning to consider multiple perspectives is an essential skill for a budding scientist. Having 573 distinct American Indian nations within the United States

means having that many distinct ways of understanding the world around us and how to interpret our observations and experimental results. This broadening of perspective provides the ability to apply unique worldviews to solving any scientific inquiry. We cannot have true empiricism without knowledge of the understood history of a studied phenomenon. Neglecting to teach about the scientific ways that American Indians understand and interact with the observable world, leaves out eons of knowledge and unique perspectives. For example, inter-relationships are understood differently within American Indian languages. It is also beneficial for everybody to learn, despite ignorant stereotypes, accurate historical and contemporary information about American Indian's sophistication regarding science and scientific method.

Rick Erickson, Bayfield HS

I grew up in the public schools of the 60s and 70s, and I believe I received a good science foundation. I was taught science primarily through a Western lens. Yet, what ignited my passion were the experiential components of my science education - engaging with my surroundings and trying to make sense of observations and patterns. My personal experience speaks to the value of considering Native perspectives in science curriculum, and it has significantly driven my teaching methods. While facilitating experiential learning opportunities in collaboration with tribal members and tribal organizations, it has been made apparent that the Anishinaabe have a deep connection with the natural world - a connection that has been passed down through generations. Anishinaabe traditional ecological knowledge is a result of generations of practicing science - interacting with their environment. The blending of indigenous practices and knowledge with Western science can lead to a rich understanding of our world. It can challenge us to evaluate our land ethics and our practices as they relate to sustainability. Additionally, indigenous perspectives and practices are deeply connected to their cultures. Therefore, incorporating indigenous perspectives in science curriculum can help all students understand and appreciate indigenous cultures which can ultimately lead to a reduction in prejudice and racism.